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Book of Abstracts

FACULTY OF ARTS
Charles University

IASCL 2024 Symposia: Tuesday Morning

07/16/2024, from 10:30 AM to 12:30 PM , Room P131

Symposium: Assessment of Pragmatic Competence in Child Language. Methodologies & Research in Diverse Populations

Speakers: Maria Busch; Lisa Vössing; Laura Hüser; Luca Plachy

This symposium provides an overview of various methodological approaches for assessing pragmatic competence in children, especially considering diverse populations such as multilingual children, children with language needs and autistic children.A

Conversation Analysis as a Methodical Approach to Assess Autistic Children's Pragmatic Competence

Authors: Lisa Vössing;

"Autistic children are considered to experience a broad range of pragmatic language impairment that vary considerably between individuals (Paul et al., 2014; Volden, 2017). To assess these pragmatic challenges and (non-autistic) children's pragmatic competence in general, a range of standardised tests, checklists and profiles exist (Adams, 2002). These assessments typically focus on the children's performance in order to identify impairments. In contrast to this individual-focused perspective, other methodical approaches, e.g. Conversation Analysis, provide insights from an interaction-focused perspective (Wilkinson et al., 2020). The focus is on the interaction of interlocutors in a naturally occurring situation. Conversation Analysis thus allows to describe pragmatic competence based on authentic conversational interactions, but initially without an diagnostic aim.

This presentation aims to discuss Conversation Analysis as an approach stemming from qualitative social research that may contribute to the diagnosis of pragmatic competence in the field of speech and language therapy. To that end, the presented research is based on video recordings of autistic children (n=5, 9-13 years old) in authentic conversations at home and in a therapeutic setting. The analytical process is informed by Conversation Analysis and focuses on sequences in which pragmatic competence comes to the fore. Those findings on pragmatic competence will be presented and discussed in relation to other methodical approaches."

Quantitative Longitudinal Study of Pragmatic Competence in Children with Special Language Needs

Authors: Laura Hüser; Dr. Markus Spreer

"In order to enable active participation of children with special language needs, it is essential to concentrate on language-systematic as well as pragmatic-communicative competence. Previous research suggests a negative relationship between impairments in structural language skills and pragmatic competence. For instance, affected children demonstrate reduced responsiveness to communicative requests (Andrés-Roqueta et al., 2021; Bishop et al., 2000). Moreover, language difficulties can influence communicative involvement and social interactions, particularly among peers (Janik Blaskova & Gibson, 2021).

A reliable diagnosis is crucial in developing a specific therapeutic approach that addresses relevant therapy goals. The DSM-5 has introduced Social (Pragmatic) Communication Disorder (SPCD) as a new diagnosis, highlighting the importance of pragmatic competence and potential corresponding disorders (William et al., 2017).

There are various methods to assess pragmatic competence such as observation, questioning, and standardised tests. The presentation focuses on the possibilities of diagnostics via standardised test procedures and quantitative research in the field of pragmatics and communication.

This research includes a longitudinal study conducted over a two-year period with four data collection points. The assessment was carried out at four primary schools in Germany, involving children with special language needs (N=~80 children). We address the following research questions:

a) How does children's pragmatic competence develop during the first two years of school?

b) How are children's language profiles related to their pragmatic competence?

By using standardised procedures, such as a questionnaire from the Clinical Evaluation of Language Fundamentals – Fifth Edition (CELF-5; Wiig et al., 2020), this quantitative study facilitates referencing to norm groups and adds to a wider understanding of the development of pragmatic and communication skills. The

classroom represents an optimal research environment as it allows for the involvement of teachers and parents in monitoring the children's development."

Pragmatic Assessment in Multilingual Contexts – The Role of Heritage Languages

Authors: Luca Plachy; Maria Busch, Dr. Stephan Sallat, Dr. Matthias Ballod

"The field of intercultural pragmatics and interlanguage pragmatics has predominantly focused on adult learners (e.g. Keckes, 2015), leaving a gap in understanding of how multilingual children develop pragmatic competences. As pragmatics considers language use in context, it contains sociopragmatic and pragmalinguistic components (Félix-Brasfelder, 2021). While the assessment of pragmatic competences of multilingual children in Germany focuses mostly on tests, observations and interviews regarding the target language, the process still doesn't take the heritage languages and thus the characteristics and resources of multilinguism sufficiently into account (Heller, 2019).

Multilingual children with typical language development have already developed complex pragmatic competences in their heritage language which include these sociopragmatic and pragmalinguistic components. Recognizing these resources in multilingual language development, this research project called MehrSelbst, funded by the German Federal Ministry of Education and Research, extends the assessment of pragmatic competences and pedagogical interventions by the children's heritage language. Therefore, in addition to interviews with the children themselves and their educators on their pragmatic competences in German as a target language, the study also provides for interviews on the pragmatic competences in the children's heritage language. The study includes children from grade 1, 4, 5 and 9 in Germany, which means children at the age of seven to fifteen.

These results are intended to serve as a basis for the development of intervention for pragmatic competences, that can be evaluated and applied for formal, informal and non-formal educational settings."

Children's Perspectives in Pragmatic Assessment - A Qualitative, Participatory Approach

Authors: Maria Busch; Dr. Stephan Sallat

"The assessment of pragmatic competences is primarily done through observations and interviews of caregivers and educators (Adams, 2002; Norbury, 2014). However, the subjective perspectives of the involved children themselves have hardly been included in applied and clinical linguistics, despite the fact that the UN Convention on the Rights of the Child calls for children's perspectives to be taken into account in all matters affecting them (Roulstone & McLeod, 2011).

Gaining insights into children's views of their own pragmatic competences and possible challenges is also relevant from a psychological perspective. Self-concepts, which are subjective beliefs and evaluative judgements one has about oneself and one's competences, are interrelated with competence development, motivation, interest, among others (Trautwein & Möller, 2016). It seems promising to consider children's perspectives and their evaluative judgements of their own pragmatic competences also in pragmatic assessment and research on developmental pragmatics.

The present study therefore addresses the following research questions:

1. How do children describe and evaluate their own pragmatic competence?

2. What methods can be used to collect and analyse the children's perspective on pragmatic competences?

3. How can the children's perspectives be included in participatory research on pragmatics and clinical reasoning in speech and language therapy (SLT)?

This study presents qualitative methodological approaches to collect and analyse children's perspectives on their own pragmatic competences in the context of pragmatic assessment, focusing on conversational repairs and initiations in turn taking. The sample consists of monolingual and multilingual primary school students in Germany, with typical language development and developmental language disorders. Possibilities for incorporating the children's perspective into research on pragmatic development and clinical decision making in SLT are derived from triangulating the children's perspectives with those of caregivers and professionals in pragmatic assessment."

IASCL 2024 Symposia: Tuesday Afternoon

07/16/2024, from 10:30 AM to 12:30 PM , Room P300

Symposium: The intersection of socioemotional well-being and bilingual development - HaBilNet-sponsored symposium

Speakers: He Sun; Andrea C. Schalley; Adam Winsler; Ekaterina Tiulkova; Annick De Houwer

In this symposium, speakers from different countries will address how bilingual experience affects children's language and social-emotional skills.

Harmonious Bilingual Experience and Child Wellbeing: A Conceptual Framework

Authors: He Sun;

The notion of Harmonious Bilingual Development has drawn increasing attention in recent years as it views children's bilingual development in a wider scope, exploring the relations between bilingual experience and family members' wellbeing. The current study operationalizes the concept through specific parental and child bilingual experiential factors and proposes a harmonious bilingual experience framework on bilingual children's social-emotional wellbeing, addressing 1) the influences of parental bilingual proficiency and perceptions with regard to parental bilingual language use, 2) the impact of parental language use on children's language use, literacy environment, and bilingual receptive vocabulary size, as well as 3) such bilingual experience and proficiency in relation to children's wellbeing. Parents of 123 English-Mandarin bilingual children (4-5 years old; 61 girls and 62 boys) filled in questionnaires on their bilingual perceptions and home bilingual environment and reported on their own and children's social-emotional behavioral skills. Children's and parents' social-emotional and behavioural skills were assessed with the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). Children's English and Mandarin receptive vocabulary sizes were assessed with a locally designed picture matching task whose format is similar to the PPVT. Children's nonverbal intelligence was assessed with Raven's Colored Progressive Matrics. Our bilingual sample generally supported the proposed conceptual framework. Specially, parental English and Mandarin proficiency was found to significantly affect parents' language use in the respective language. Parental language use also influenced children's language use, literacy activity, as well as receptive vocabulary sizes in both languages. Finally, children's bilingual experience was found to influence their own social emotional skills, after controlling for the impact of parental social emotional skills. Specifically, better societal language skills and more frequent bilingual reading were found to promote children's prosocial skills, while more children's books predicted lower children's total difficulty level, including such as peer relationship problems.

Parental socio-emotional experiences and children's bilingual development

Authors: Andrea C. Schalley; Susana A. Eisenchlas

"We focus on the relation between parents' past and present socio-emotional experiences and their children's bilingual skills development. We explore which parental experiential factors might impact on their children's bilingual language acquisition outcomes, and consider the latter in regards to both reported productive and receptive skills.

The data are sourced from a transnational online survey we developed to examine factors impacting home language transmission. As theoretical framework and guide to the survey design, Spolsky's (2009) language policy framework – including the three components of language ideologies, language practices, and language management – was applied in the context of the family and supplemented with affective and social components (Schalley & Eisenchlas, 2020).

Here, we specifically focus on the following factors: (i) parents' own bilingual upbringing (if applicable), and in particular affective and social experiences when growing up and how these influence their own family language policy, (ii) parents' current use of their languages within the family and in particular with their children, (iii) parents' assessment of the importance of their languages, (iv) parents' assessment of their own language identity, (v) parents' emotional reactions to their children's use or refusal of languages, (vi) parents' reasons for transmitting or not transmitting their home languages, (vii) parents' language anxiety levels in their languages, and (viii) parental beliefs on language ideologies in the society where they reside as well as parental beliefs towards multilingualism in general.

While the data collection and analyses are still ongoing, we expect to uncover evidence that specific parental socio-emotional experiences correlate with children's language acquisition outcomes. Thus, one generation's

socio-emotional well-being might impact on the following generation's bilingual development – an aspect that has to some extent been disregarded in research to date."

Academic Benefits from Early Bilingualism: Elementary and Middle School Outcomes Associated with Ear

Authors: Adam Winsler; Gabrielle Norvell, Nadine Rozell, Tevis Tucker

Social skills, wellbeing, and academic performance are intertwined constructs in childhood, each contributing to the others. Earlier acquisition of English is generally associated with better academic performance for dual language learners (DLLs) in the U.S., but large-scale, prospective, longitudinal studies examining early English acquisition trajectories and how they relate to academic outcomes (accounting for relevant covariates) are rare. We explored how the year/grade in which DLLs acquired English proficiency relates to academic outcomes (grade retention, grade point average (GPA), reading and math test scores) in 5th grade and in 8th grade, controlling for gender, ethnicity, poverty, and school readiness skills at age 4. A large (N = 17,548), ethnically diverse (86% Latino, 10% Black, and 4% White/Other), and predominantly low-income sample (80% in poverty) of 4-year-old DLLs (mostly but not all Spanish-English) was followed longitudinally from their pre-K year through the end of middle school (8th grade in the US). Earlier acquisition of English, as defined by the school district as the student no longer needing English as second language services), predicted better performance on each of the 5th and 8th grade outcomes. Earlier proficiency in English was even more predictive of outcomes for students with initially high cognitive skill, Latino/Hispanic DLLs (compared to Black DLLs), and those not in poverty. Implications for practice and research will be discussed.

Social-emotional well-being among 5-year-old French-Russian children in France: links with input and

Authors: Ekaterina Tiulkova; Vanda Marijanović, Barbara Köpke

"This study explores the concept of Harmonious Bilingual Development (HBD) for Franco-Russian children with the aim to discern how input, parental factors, and children's attitudes impact their social-emotional and behavioral skills (SEBS) and how these factors relate to their language proficiency. Both parent and child data were collected in France for 36 five-year-old children with Russian and French as their first languages.

A parent questionnaire and activity journal assessed parental attitudes towards bilingual education, children's language exposure and the quality of language input (speakers, activities, media, reading). The Strengths and Difficulties Questionnaire was used to evaluate parent's view of SEBS. Children's language proficiency was determined on the basis of oral fluency measures in each language (mean syllable length, mean length of run, pause location) obtained through a picture-story retelling task and their attitudes were determined based on their affection for languages.

This presentation will link attitudes and input to fluency in oral productions considering variables such as parental education level, childbirth order, family size. The influence of attitudes was analyzed through a clustering method, underscoring the significance of both input quantity and quality in bilingual development. Children with limited exposure to Russian exhibited lower levels of SEBS, while those with higher exposure displayed higher levels. Parental attitudes were found to influence children's perceptions, and children with positive language attitudes towards both languages exhibited superior SEBS. With respect to fluency measures, preliminary results suggest that children with higher quantity of input in Russian produced more syllables per run (interval between two pauses) and fewer pauses within utterances, and this in both languages. This study highlights the connection between children's attitudes and their bilingual development. By advancing our understanding of HBD, this research advocates for supporting non-societal languages and promoting an inclusive linguistic environment for children, beneficial for their social-emotional well-being."

Symposium: Neural tracking of speech in the developing brain: paths forward

Speakers: Melis Çetinçelik; Tineke Snijders; Sergio M. Pereira Soares; Anika van der Klis; Katharina Menn

This symposium investigates infants' neural tracking of speech, various factors influencing it, and its development in the early years, focusing on the relationship between individual differences in neural tracking and language development.

Relating infants' neural tracking of speech to word segmentation and language development

Authors: Tineke Snijders; Fleur M.H.G. Vissers, Iris C. Schmits, Anne Kösem

"Infants use rhythmic information as an important cue for word segmentation. One possible mechanism for this might be neural tracking of speech: the synchronization of neural responses to rhythms in speech. In this talk, we will discuss two longitudinal studies relating neural tracking to word segmentation performance, as well as to later vocabulary development.

In the first study, 108 Dutch infants were followed in multiple sessions. In an EEG session at 7.5 months, we assessed infants' neural tracking of speech by looking at speech-brain coherence (SBC) in response to book-read child-directed speech. At 9 months we tested their word segmentation in a head-turn paradigm, comparing looking times to familiarized versus novel words. SBC at 1.5-1.75 Hz (~stressed syllable rate) over left-frontal electrodes was significantly related to the word segmentation familiarity effect. At the conference, we will additionally discuss novel results relating infants' neural tracking and word segmentation to their later vocabulary development (18,24,31 months).

In the second EEG study, 65 9-month-old Dutch infants listened to rhythmic and non-rhythmic speech in which bi-syllabic low-frequency words were repeated. Sentences had a consistent alternating strong/weak syllable pattern with a rate of 3.2 Hz. The non-rhythmic condition was created by speeding up or slowing down speech across several syllables. Rhythmic speech resulted in more SBC than non-rhythmic speech, over bilateral frontal electrodes for the syllable rate (3.2Hz), and over left frontal electrodes for the stressed syllable rate (1.6Hz). SBC at the syllabic rate was significantly related to infants' word segmentation performance, as shown by their word familiarity ERP effect. We will additionally present new results relating SBC at 9 months to further vocabulary development at 27 months.

Together, the experiments inform about the functional relevance of neural tracking of speech in infants for their word segmentation ability and further language development."

Infants' neural tracking of multimodal speech and its relationship with vocabulary development

Authors: Melis Çetinçelik; Antonia Jordan Barros, Caroline F. Rowland, Tineke M. Snijders

"Infants' early experiences with language frequently occur in face-to-face interactions with caregivers. In these interactions, infants receive multimodal language input from both the auditory speech signal and the speaker's face, including eye gaze and rhythmic movements of the lips. While it has been demonstrated that both eye gaze and visual speech cues facilitate word learning and speech processing, the effects of these cues on infants' neural tracking have not been examined. Neural tracking refers to the time-locking of neural oscillations to rhythmic units in speech and may be a neural mechanism that allows infants to use the temporal regularities in speech for speech processing.

In two EEG studies, we tested the role of eye gaze and visual speech cues on infants' neural tracking of speech. 32-channel EEG data was recorded from Dutch 10-month-olds while they watched videos of a native Dutch speaker reciting passages in infant-directed speech (IDS). Speaker's eye gaze (direct vs. averted) was manipulated in experiment 1, and visual speech cues (fully audiovisual vs. mouth region occluded) in experiment 2. Speech-brain coherence was calculated to assess infants' neural speech tracking at the stress and syllable rates (1-1.75 and 2.5-3.5 Hz respectively in our stimuli), as amplitude modulations are especially marked in these frequencies in IDS. In both experiments, infants tracked the speech envelope at the stress and syllable frequencies, but contrary to our predictions, this was not modulated by the audiovisual cues, neither by eye gaze, nor visual speech cues. Furthermore, infants' neural speech tracking at 10 months was related to their receptive and expressive vocabulary size at 18 months.

Overall, our results suggest that infants' speech tracking is not necessarily impaired when visual speech cues are not visible or when the speaker's gaze is averted, and may be a potential mechanism for successful language acquisition."

Neural tracking and language development in early life: A longitudinal approach

Authors: Sergio M. Pereira Soares; Tineke M. Snijders, Caroline F. Rowland

"One of the most fascinating recent discoveries in neurolinguistics is that neurons' oscillatory patterns synchronize with external signals such as speech. Especially in early child development, this is of great importance to better understanding language acquisition milestones, as e.g., the ability to segment continuous speech into smaller linguistic units. Studies on infants have found that modulations of infant directed speech amplitudes are particularly strong around certain frequency ranges, corresponding to stressed syllables, syllables, and phonemes. This early entrainment seems to indicate that infants are able to neurally track speech. Thus, this raises the hypothesis that the alignment of neural activity to speech-relevant amplitude modulations might sustain language development. Indeed, the initial literature in this field seems to suggest a link between tracking and early language acquisition. This link might result from infants with greater tracking having an advantage for language acquisition, or alternatively that infants with better language are better at tracking speech.

Here, we want to assess whether individual trajectories in the development of neural tracking of speech relate to individual differences in language skills and if/how environmental factors (e.g., SES) influence these effects. We predict that at different ages, different rates might drive tracking mechanisms. We also expect that more favourable environmental conditions will modulate these effects.

We are collecting EEG data from monolingual Dutch infants while they listen to child-directed stories at three different timepoints in the first year of life (6, 9, and 12 months). Furthermore, we collect early language development data in the second year of life. Speech-brain coherence data will be longitudinally compared between the three sessions and regressed to concurrent language skills at the beginning of their second year of life (N=70, expected by April 2024). Mediation analyses will be performed to explore the role environmental factors might have on individual language development."

Longitudinal trajectories of infants' neural tracking of nursery rhymes and their implications

Authors: Anika van der Klis; Melis Çetinçelik, Katharina Menn, Tineke M. Snijders, Caroline Junge

"Speech contains rhythm, expressed at nested frequencies. A recent discovery is that brain rhythms align with the rhythms of surrounding speech, which even infants can already achieve. Importantly, the degree to which infants exhibit this coherence can be linked to their language acquisition. For example, cross-sectional research demonstrates that the neural tracking of stressed syllables in nursery rhymes (at a rate of 1-3 Hz) at 10 months (but not 14 months) predicts future vocabulary development. These findings raise several questions: What are the developmental trajectories in neural tracking across different frequencies (stressed syllable < syllable < phonological rate) from infancy into toddlerhood, and is neural tracking of each rate equally important at each age?

To address these questions, we turn to the YOUth cohort, an ongoing longitudinal cohort study following Dutch children from preterm to childhood, aiming to capture meaningful individual differences. EEG measurements were collected at three time points (5 months, 10 months, and around 3 years of age). During these assessments, children viewed clips in which two female actors alternately sang Dutch nursery rhymes. Language outcomes were also assessed at the final wave using the Peabody Picture Vocabulary Test (PPVT).

Data collection is complete (>500 children participated). In the coming months, we will analyze the trajectories of neural tracking at the three frequencies. We will also compare the predictive value of neural tracking at each frequency rate for each age group. Our study seeks to confirm and expand upon existing findings by examining a larger group of neurotypical children and sampling at three time intervals into early childhood. Additionally, we aim to explore the implications of these neural tracking patterns for language acquisition at a later age than ever sampled before."

Phonological Acquisition Depends on the Timing of Features

Authors: Katharina Menn; Claudia Männel, Lars Meyer

"The infant brain is characterized by slow electrophysiological activity, which limits initial processing abilities to environmental information that is slow. Nevertheless, infants start acquiring the phonemes of their native language during their first year of life—which is paradoxical, given the short lifespan of phonemes. We here show that phoneme acquisition hinges on the timing of phonological features, which for instance specify phoneme class, manner, or place of articulation. While individual phonemes alternate quickly with an average duration of ~50 ms in infant-directed speech, these features often span sequences of multiple subsequent phonemes, thus fitting infants' slow processing.

We traced the emergence of feature-based phoneme representations that are known to govern speech processing in the mature brain. We collected electroencephalogram (EEG) data from a final sample of 66 children aged 3 months to 4.5 years while they listened to stories in their native (German) and an unfamiliar language (French). Categorical processing of features was assessed using EEG deconvolution (Temporal Response Functions). Our cross-sectional analysis uncovers a gradual developmental increase in neural responses to native phonemes, but not to non-native phonemes. Critically, infants seem to acquire those features first that extend over longer time intervals—thus meeting infants' slow processing abilities. Shorter-lived phoneme features are added stepwise, with the shortest acquired last. Post-hoc analyses indicate that a feature's similarity to pitch contours best predicts its age of acquisition, indicating that phonological acquisition may extend upon neural entrainment to prosody.

Our study highlights the role of electrophysiological maturation in shaping early language acquisition. We suggest that the duration of the acquired units is critical to the learning trajectory. We also suggest that parental speech adaptations might temporally align them to their infants' processing abilities."

Symposium: Developing Chinese as a first language in US, Hong Kong and Beijing

Speakers: Ziyin Mai; Jingyao LIU; Mengyao SHANG; Arthur KAN; Virginia Yip

Three newly constructed open-access corpora documenting development of Chinese in preschoolers in three sites and four studies comparing different aspects of grammatical development based on the corpus data

Acquiring Chinese in US, Hong Kong and Beijing: three new corpora and three verbal structures

Authors: Ziyin Mai; Mengyao Shang, Jingyao Liu, Shanshan Yan, Stephen Matthews, Virginia Yip

"This paper presents key architectural features of three recently completed child Mandarin corpora and an analysis based on the data: The Child Heritage Chinese Corpus (CHCC) and Hong Kong Child Mandarin Corpus (HKCMC) document the development, maintenance and shift of language dominance in US and Hong Kong children (n = 4 in each site), all acquiring Chinese and English in largely "one context-one language" input models. The US children come from varying Chinese heritage backgrounds, whereas the HK children were addressed primarily in Mandarin at home and exposed to English through intensive English-medium pre-schooling. Both corpora recorded adult-child interaction sessions in unstructured toy-play activities regularly and longitudinally over two or three years (starting age from 1;7 to 4;11), with either Chinese or English as the designated language in a session.

The Beijing Child Mandarin Corpus (BJCMC) was constructed to address the absence of systematic multimedia corpora of monolingual child Mandarin at preschool age and the practical need for a monolingual reference point for our bilingual children. BJCMC maximally matches HKCMC in age range, SES, and recording setup and recorded 48 children aged from 3;0 to 6;9 cross-sectionally. Transcription and data analysis are in progress.

Our preliminary analysis found comparable grammatical complexity between the US and HK children between 2;10 and 4;8. The US children begin to lag behind the HK children after 4;8, presumably due to dramatically reduced input and experience of Mandarin in the US context. Closer examination of three complex verbal constructions (ba-construction, resultative verb compounds and postverbal prepositional phrases) is in progress. These verbal structures, which were shown to be vulnerable in school-age heritage bilinguals in our previous studies (Mai et al., 2021, etc.), are predicted to show early signs of vulnerability in our bilingual pre-schoolers, compared with the Beijing monolinguals."

Marking exclusive focus in Mandarin-English bilinguals: syntactic, discourse and prosodic means

Authors: Jingyao LIU; Ziyin Mai

"Interface properties have been shown to be vulnerable to cross-linguistic influence (CLI) and input reduction, and are thus the locus of delayed acquisition in bilingual children. Our study examines the development of two focus particles (FPs) – only in English and zhi(you) in Mandarin in four Mandarin-English bilingual preschoolers in the Hong Kong Child Mandarin Corpus (HKCMC).

Only and zhi(you) express exclusive meaning by identifying the intended focus within its c-commanding scope and negating the overt or covert contextual alternatives to the focus (e.g., wo ZHI mai shui "I-ONLY-buy-water (but nothing else)"). Focus manifestation in only and zhi(you)-utterances display systematic similarities and differences in syntactic preference, discourse sensitivity and prosodic marking. Experimental studies have shown that focus identification presents great challenges to monolingual children in both languages (Notley et al., 2009), but so far little research has examined spontaneous only/zhi(you)-utterances in naturalistic settings.

We extracted 434 only/zhi(you)-utterances produced by the bilinguals from the corpus. Results showed an overall target-like performance in syntactic positioning and semantic association of the FPs. Interestingly, the children were able to spontaneously employ discourse means to provide contrastive contexts, disambiguating the sentences in terms of focus interpretation. Nevertheless, our bilinguals did not use prosodic cues to indicate focus in either language, even in obligatory contexts where contrastive prosodic stress is required in English. Overall, our results reveal early acquisition of syntactic, semantic and discourse properties and late acquisition of prosodic properties attached to only/zhi(you) FPs in bilingual children, highlighting uneven development across different linguistic features within one complex structure. To what extent this is attributable to the bilingual acquisition conditions is being evaluated through comparing the HKCMC children with monolingual baselines in both Mandarin (Beijing Child Mandarin Corpus/BJCMC) and existing English baselines in CHILDES."

Noun-Modifying Clause Constructions in Mandarin-English bilingual children across contexts

Authors: Mengyao SHANG; Ziyin Mai, Stephen Matthews, Virginia Yip

"This study investigates the naturalistic production of Mandarin Noun-Modifying Clause Construction (NMCC) in Hong Kong bilingual children and US heritage children. As an under-studied construction, NMCCs share structural similarities with Relative Clauses (RCs). However, NMCCs do not necessarily involve a syntactic gap as typical RCs do but solely rely on a semantic-pragmatic link between the head noun and the modifying clause, as in (1) where ka 'card' is associated pragmatically rather than syntactically with [women kai youxi] 'we start the game'.

(1) [MODIFYING CLAUSE] de HEAD NOUN

[women kai youxi] de ka

We start game de card

'the card for us to start a game' (Sophie 6;10)

Given that NMCCs are pervasive in spoken Mandarin but are rarely studied in the acquisition literature, our study focuses on the non-RC type of NMCCs in child Mandarin across two acquisition contexts in 8 children from Child Heritage Chinese Corpus (CHCC) and the Hong Kong Child Mandarin Corpus (HKCMC).

We compared 420 NMCCs produced by the 8 bilingual children with 347 NMCCs produced by monolingual children from 7 existing corpora in CHILDES. We found that non-RC type NMCCs are produced less frequently by the bilinguals, possibly attributable to influence from English, in which structural equivalents of NMCCs are rare. Production of non-RC type NMCCs is further reduced in the heritage bilinguals (children in CHCC) than the Hong Kong bilingual children in HKCMC, who had more access to Mandarin in the larger environment. The generally reduced production of non-RC type NMCCs in bilinguals may be caused by reduced input in Mandarin, especially for child heritage speakers acquiring Mandarin as a minority language in English-dominant contexts. Our findings contribute to the growing literature on the diversity of bilingual development in different contexts."

Verb-particle and directional verb constructions in Mandarin-English bilinguals

Authors: Arthur KAN; Ziyin Mai, Stephen Matthews, Virginia Yip

"This study presents the first multifactorial analysis of verb–particle constructions (VPCs) in English and directional verb constructions (DVCs) in Mandarin in a dataset comprising bilingual children raised in two types of "one context-one language" conditions. English VPCs allow two word orders: VOP (put the book down) and VPO (put down the book), except when the object is pronominal (VOP: put it down vs. VPO: *put down it). The DVC in Mandarin is a structural equivalent of VPC in English, which strongly prefers the VPO order. Despite extensive research into cross-linguistic influence (CLI) in bilingual acquisition, how CLI is modulated by amount of input is still not well understood. Given the cross-linguistic differences, we predict bi-directional CLI effects interacting with input conditions in English VPCs: the VPO order should be more prominent in children with more input in Mandarin.

We extracted 1937 VPCs from two Mandarin-English bilingual child language corpora (Child Heritage Chinese Corpus, Hong Kong Child Mandarin Corpus) and English monolinguals in the Manchester Corpus. Word order (VPO vs. VOP) was fitted to a generalized logistic mixed-effects regression, which includes Group (US bilingual, HK bilingual, English monolingual), MLUw, Language dominance (English-dominant vs. Balanced vs. Mandarin-dominant) and Type of object (lexical vs. pronominal) as fixed factors. Results indicate a significant difference in proportion of VPO between the bilinguals and the English monolinguals, rather than between the two groups of bilinguals, indicating general differences between monolingual and bilingual learners regardless of fine-grained bilingual input conditions. In addition, an interaction effect between population and object type was found, suggesting shared knowledge by all groups in distinguishing between lexical NPs and pronominals. Analysis of DVCs is in progress with DVC tokens being extracted from the two bilingual corpora and the new Beijing Child Mandarin Corpus."

Symposium: Language and communication in children with neurodiverse pragmatic profiles

Speakers: Núria Esteve-Gibert; Elena Castroviejo; Zuriñe Abalos; Isabel Martín-González; Albert Giberga; Nadia Ahufinger; Clara Andrés-Roqueta

We bring together studies that use different methodologies to understand how linguistic, cognitive, or learning difficulties impact the pragmatic skills of children with DLD and ASD profiles.

Narrative coherence in autistic and typically developing children

Authors: Zuriñe Abalos; Begoña Vicente & Elena Castroviejo

"This study investigates the frequency of different types of causal Rhetorical Relations (RRs) produced by 40 autistic and 53 typically developing (TD) Spanish-speaking children, matched in verbal mental age (6;0-11;11 years). Since causality plays a pivotal role in constructing coherent narratives, identifying differences in the acquisition of causal RRs between the typical and atypical groups could contribute to enhancing our comprehension of the development of narrative coherence among autistic children. Specifically, we examine the frequency of explicit/implicit (1), objective/subjective (2) and relevant/irrelevant (3) causal RRs produced by children in a narration task (Frog, where are you?).

(1) a. The jar broke because the dog fell. (Explicit)

b. The jar broke. The dog fell. (Implicit)

(2) a. The boy got mad at him because he smashed the jar. (Objective)

b. They'll buy another jar, because it's broken. (Subjective)

(3) a. He was scared because the bees were chasing him. (Relevant)

b. They yelled her name, because she may already have a name. (Irrelevant)

In addition, narratives are coded following the Narrative Scoring Scheme (NSS), to obtain a more complete understanding of children's macrostructure (coherence) skills. Previous works examining discourse production in autism have revealed persistent challenges in organizing coherent narratives, establishing causal connections among events, and providing relevant information. Considering these findings, we hypothesize that autistic children will (i) show a lower frequency of causal RRs overall, particularly exhibiting fewer explicit, subjective and relevant causal RRs, and (ii) score lower in the NSS. Furthermore, whereas a linear developmental trajectory is expected within the TD group concerning the frequency of causal RRs (and NSS scores) (Sah, 2015), we hypothesize that the autistic group will exhibit a non-linear trajectory, given that narrative coherence extends beyond mere structural language skills."

That child is a grasshopper! ASC children's processing of novel metaphor

Authors: Isabel Martín-González; Kristen Schroeder, Camilo R. Ronderos, Elena Castroviejo, Ingrid L. Falkum, and Agustín Vicente

"Autistic young children seem to develop metaphorical capacity at a slower pace than TDs (Van Herwegen & Rundblad, 2018) but reach levels close to TDs in offline measures like multiple choice. However, they still present atypicalities in processing measures (Vulchanova et al. 2019). We developed a combined paradigm to explore both offline (picture selection) and online (eye-tracking) performance in ASC young children (3 to 10 years old) when comprehending novel metaphors; considering their verbal mental age/chronological age and balancing world knowledge/reducing uncertainty when comparing them to their TD peers. This paradigm was used to study TD's development of metaphorical skills.

In our task, children had to select one picture out of 4 options: the correct one, the competitor, and two distractors. Children heard: Grasshoppers jump a lot. That {child, animal} is a grasshopper. Which one is it? In the literal condition, they would hear "animal", and in the metaphorical condition, "child". The pictures were the same in both conditions (in this case, a jumping child would be correct in the metaphorical condition and a grasshopper would be the competitor). Children's proportion of fixations to the metaphorical image vs. the

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literal image (i.e., their preference in terms of attention) was measured for two critical time-windows: the target word region (grasshopper within the metaphor) and the question region (which one is it?).

To be included in the study, the ASC children had to present IQ within the typical range and be fluid speakers.

We plan to conduct our analysis using R software to build a mixed effects model with the following general structure: response ~ Condition*group + (1+Condition || Participant) + (1+Condition*group || Item). The model will have the same structure for the eye tracking data."

The use prosodic and gesture information to process pragmatic meaning in DLD

Authors: Albert Giberga; Alfonso Igualada, Nadia Ahufinger, Mari Aguilera, Ernesto Guerra, Núria Esteve-Gibert

"Previous studies show that the combination of linguistic prosody and body gestures aid children and adults in accessing pragmatic meanings (Armstrong et al., 2018; Crespo-Sendra et al., 2013; Morett et al., 2021). Here we investigate whether children with Developmental Language Disorder (DLD) are more likely to benefit from prosodic and gestural cues than Typically-Development (TD) children when processing pragmatics. Because structural language abilities impact on pragmatics comprehension (Katsos et al., 2011), when structural language is compromised the presence of prosodic and multimodal cues can be particularly beneficial to help access pragmatic information.

A total of 39 children with DLD and 39 TD children aged 5 to 10 participated in a visual-world eye-tracking task. We manipulated two factors: the type of meaning to be processed (literal interrogative sentences; nonliteral indirect requests - the first being less pragmatically complex than the second), and the presence of multimodal cues (prosodic cues; prosodic+gesture cues; no-enhancement). We predicted that the accumulation of multimodal cues would help children with DLD to choose the target image faster and with more accuracy, compared to TD children, especially when processing pragmatically-complex utterances.

Offline results revealed that prosodic as well as prosodic+gesture cues help children in processing less-complex interrogative utterances ($p > 0.001$; $p > 0.001$, respectively), with no interaction with participants' group, while prosodic+gesture cues were especially useful when children with DLD process more-complex nonliteral requests ($p > 0.001$). Online eye-tracking data revealed that children with DLD divide their looks between target and competitor images more so than TD children (them being more accurate in looks to target), but no significant difference in the timing of these looks. This study informs about the types of cues that can help children with language impairment have successful communicative interactions."

The role of emotional prosody to identify emotions: an eye-tracking study with children with DLD

Authors: Nadia Ahufinger; Mari Aguilera, Ernesto Guerra, Llorenç Andreu, Mònica Sanz-Torrent, Oriol Verdaguer, Coral Mayo

"Previous studies have suggested that prosody plays a central role in emotional comprehension. Moreover, emotional prosody comprehension is essential for social communication, but it is still unknown whether children with DLD exhibit emotional prosodic comprehension deficits to identify the emotions of others. Studies examining semantic and prosodic cues with eye tracking showed that prosodic meanings can be overridden by semantic cues when linguistic information is task relevant. This pilot study investigated the effects of emotional prosody to identify emotions in Catalan-Spanish children with and without DLD.

Participants were 22 children with DLD and 22 typical development children (sex and age paired; Mage = 9,7; 10 girls per group). The eye-tracker-software iMotions was used for two experiments. Four images (database of Karolinska Directed Emotional Faces) of the same person expressing different emotions (happy, sad, angry, scared, neutral) were presented. Participants were asked to listen to some sentences (subject, verb and predicate). In Exp, the emotions were said explicitly (e.g., "Laura is happy") and in Exp2 the emotions were said implicitly driven from the verb (e.g., "Cristina escapes from the dog"). Half of the trials were prosody-semantically congruent, and the other half were prosody-semantically incongruent. Participants had to click on the expression face that matched with the oral cue.

Preliminary results showed that behavioral and eye tracking results showed for both groups that the semantic target was significantly preferred in both congruent and incongruent conditions. In congruent conditions, accuracy was better than in incongruent conditions. TD children outperformed children with DLD in terms of faster and larger preference for the target in both experiments.

Emotional prosody is a key dimension for emotional understanding ability, especially in population with DLD. Evidence in the emotional field is needed to design and implement a comprehensive intervention combining language and psychological aspects."

Measuring receptive pragmatic skills in children with Neurodevelopmental Disorders with PleaseApp

Authors: Clara Andrés-Roqueta; Raquel Flores-Buils & Alfonso Igualada

"Pragmatic skills allow children to use language with social purposes. Nevertheless, pragmatic difficulties are observed in children with Autistic Spectrum Disorders (ASD) and Developmental Language Disorders (DLD), among other disorders (Saul et al., 2023). Andrés-Roqueta and Katsos (2017) pointed out that there are few assessment instruments that offer quantitative and qualitative data about pragmatic skills, and they are usually focused on specific aspects. In parallel, digital instruments are expected to compensate for executive function, communication and motivational difficulties when assessing children with developmental disorders (Lorah et al., 2015).

The aim of this study is to test whether PleaseApp (Andrés-Roqueta et al., in press) is an adequate and reliable instrument to assess pragmatic age-appropriate skills in children with ASD and DLD. This digital instrument assesses eight receptive pragmatic skills of children from 5 to 12 years-old: figurative language, narrative, reference, indirect speech, visual and verbal humour, gesture-speech integration, politeness, and complex intentionality.

Methods. A group of typically developing (TD) children aged 5-12 years, and two groups of children with ASD and DLD were recruited. Psychometric properties were examined by confirmatory factor analysis within the TD group, and between group comparisons (age differences and inter-group differences with clinicals groups) were examined with a one-way Anova and a Tukey's test was performed.

The eight levels presented an adequate fit and good reliability. Moreover, significant age differences were observed within the TD sample in five out the eight levels. Finally, when comparing clinical groups to TD group, results revealed a lower performance of both groups (ASD and DLD) in the eight pragmatic components of the PleaseApp. PleaseApp is presented as a good tool for assessing age-appropriate receptive pragmatic skills in children with ASD and DLD, and it also helps to clarify the specific problems that a child has to better plan adapted interventions."

Symposium: Bilingualism and autism: Children's abilities across linguistics domains and via varied contexts

Speakers: Tamara Sorenson Duncan; Gonzalez-Barrero Ana Maria; Megan Gross; Natalia Meir

This collection of research discusses key domains of language development and its acquisition in varied contexts for a growing population: bilingual children on the autism spectrum.

English L2 morphosyntactic development in bilingual autistic and neurotypical children

Authors: Tamara Sorenson Duncan; Johanne Paradis, Olivia McMurtry & Lydia Samis

"Understanding bilingual development among autistic children requires examining the influence of both their autism and their bilingual environment. Among monolinguals, whether autistic children show relative strengths in morphosyntactic development compared to other linguistic subdomains is debated (i.e., the so called "form vs. meaning" debate; Naigles & Tek, 2017). Among neurotypical bilingual children, length-of-L2-exposure, age and vocabulary size can be associated with individual differences in L2 morphosyntactic development (Paradis, 2023). Accordingly, this study asked: (1) Are neurotypical bilinguals more advanced than same-age autistic bilinguals in L2 morphological accuracy and use of complex sentences? (2) Are L2-exposure, age, and L2-vocabulary size related to children's morphosyntactic development similarly for both groups?

The English-L2 morphosyntax of autistic (n=23) and neurotypical (n=26) children, (mean=6;10; range=4;7-9;6) from diverse L1 backgrounds was examined using transcribed and coded conversational language samples. Morphosyntactic variables were use of complex sentences and accuracy with tense and non-tense morphology. Length-of-L2-exposure and age were gathered via parent questionnaire and vocabulary size was measured using the PPVT. Linear regression modelling with Group (neurotypical, autistic), L2-exposure (months), Age (months) and L2-vocabulary (raw scores) as predictor variables revealed: (1) The autistic group used fewer complex sentences and were less accurate with non-tense morphemes than the neurotypical group; no group differences emerged for tense morphemes. (2) For both groups, children with more L2 exposure used more complex syntax, older children were more accurate with tense morphology, and children with larger L2-vocabularies used more complex syntax and had greater accuracy with both morpheme types. Overall, our findings show that autistic bilingual children can have lower morphosyntactic abilities than neurotypical bilingual age peers into the school years. Nevertheless, the same individual difference factors predicted variance in morphosyntax for both groups. We conclude that bilingual development in autistic children shares characteristics with autistic monolinguals and with neurotypical bilinguals."

Lexico-Semantic Skills of Bilingual Autistic and Non-Autistic Children

Authors: Gonzalez-Barrero Ana Maria; Gabrielle Morin

"There is a growing number of autistic children who speak two or more languages. Although there is an increasing interest in the language development of these children, more research has focused on one of their languages. In this study, we used a verbal fluency task to examine the language and cognitive skills of bilingual autistic and non-autistic children. Verbal fluency tasks provide key information on lexico-semantic skills (Shao et al., 2014) and they also tap into two challenging areas in autism: language and executive functioning. Our objective was to examine the temporal dynamics of a verbal fluency task including bilingual children's two languages.

Twenty-four bilingual school-aged children (12 autistic and 12 non-autistic) participated in the study. Children were given 1 minute to name all the elements they knew for a given category. Items produced in the bilingual children's dominant and non-dominant language were compared. Groups were closely matched on key variables that influence verbal fluency performance (e.g., age, NVIQ). Responses produced in each language spoken by the child (i.e., dominant and non-dominant) were coded based on the specific time in which they were produced.

Results showed that bilingual autistic children were faster and produced more words in their dominant relative to their non-dominant language. We are currently analyzing the temporal dynamics of bilingual non-autistic relative to bilingual autistic children. Results from this analysis will provide insight into the cognitive profile of bilingual autistic children. For instance, if it is found that autistic children are slower at producing words compared to their non-autistic peers, future research could explore further the processing styles of this population and how they relate to theories of slowing processing speed in autism (e.g., Zapparrata et al., 2022). These results can also inform future evidence-based interventions by tailoring them toward the processing style of bilingual autistic children."

Language choices of bilingual children diagnosed with autism: Monolingual & bilingual interlocutors

Authors: Megan Gross; Lavender Probasco, Nancy Garcia & Rudolph Lucier

"Although research on bilingualism and autism has expanded considerably in the past decade, most studies continue to focus on skills in the societal language and group comparisons with monolinguals, rather than examining bilingual development across both languages and the variability that exists within bilingualism. In particular, there has been limited work among autistic children on code-switching, a common bilingual language practice that serves important pragmatic functions (e.g., Yu, 2016). In the current study, we examined language choices, including code-switching, by bilingual children with an autism diagnosis when interacting with both monolingual and bilingual conversation partners in relation to their parent-reported language environment at home, in school, and in therapy.

To date, four Spanish/English bilingual children with a diagnosis of autism, ages 5-7, have participated in structured and unstructured interactions with monolingual and bilingual adults over Zoom. Structured interactions included a scripted-confederate dialogue task in which children described pictures with three different partners: a bilingual who code-switched frequently, a Spanish-speaking monolingual, and an English-speaking monolingual. Unstructured tasks included interactive story games across multiple sessions with the same bilingual experimenter.

The children's families had different regional backgrounds (El Salvador, Mexico, Peru, Spain) and lived in different parts of the U.S. All four children attended English-only schools, although three received at least some therapy services in both languages. Preliminary analyses revealed variable patterns, including some children who code-switched mostly during unstructured tasks and others who code-switched primarily during a structured task or not at all. Given the variability among participants, we will present an in-depth profile of each child's observed language use, as well as family language practices and experiences with code-switching. Although these individual profiles do not allow for broad conclusions, they will illustrate the variability that exists within both autism and bilingualism and inform factors to examine in future work."

Different paths to bilingualism in Autism Spectrum Disorder (ASD): Natural and Unexpected

Authors: Natalia Meir; Iris Hindi

"Several case studies have provided evidence of unexpected language acquisition among individuals with ASD (Smith & Tsimpli, 1995; Zhukova et al., 2021). Unlike other bilingual children with and without ASD, who acquire both languages through interactions with family and community members, some children with ASD achieve second-language learning through non-interactive multimedia. This study examines unique profiles of children with ASD who acquire a new language that is not the ambient language of their environment and explores the reasons and implications of this exceptional phenomenon of multilingualism in ASD.

We recruited three groups of children aged 4-10: (1) children with typical language development, born to English-speaking homes, who acquired English as their Heritage Language and Hebrew as the Societal language (BiTLD, n=20); (2) children of the same profile with ASD (BiASD-HL, n=12); and (3) children with ASD who learned English via non-interactive multimedia (BiASD-IT, n=14).

Background questionnaires were administered to all children. Children with ASD were assessed using ADOS-2 (Lord & Rutter, 2012) to determine ASD severity. Morpho-syntactic skills were measured using LITMUS Sentence Repetition tasks (Marinis & Armon-Lotem, 2015). Extensive task batteries tested children's verbal and non-verbal theory of mind (ToM) skills. All children were tested in English and in Hebrew. Children and parents were interviewed regarding the mode of acquisition and language use preferences.

No group differences were observed in morpho-syntactic performance in English and Hebrew. Verbal and non-verbal ToM abilities varied across groups, with higher performance in the BiTLD group. Follow-up analyses revealed that the main reason for learning a new language in the BiASD-IT group was to enhance Internet activities.

The findings demonstrate that paths to language acquisition in ASD can vary: children can acquire their two languages through interactive input at home and in educational settings, as well as through non-interactive media."

Symposium: Morphosyntactic difficulties in young children with DLD: milestones, measurement and interventions

Speakers: Rob Zwitserlood; Anouk Scheffer; Luisa de Heer; Gerda Bruinsma; Ellen Gerrits

This symposium discusses grammatical growth in Dutch young children with DLD, different procedures for goal setting and measuring therapy effect, and several grammatical intervention approaches researched in various age groups of children with DLD.

Morphosyntactic development of 3- to 6-year-old Dutch children with DLD

Authors: Anouk Scheffer; Brigitta Keij, Britt Hakvoort, Esther Ottow-Henning, Ellen Gerrits, & Frank Wijnen

"Background:

Most children with a developmental language disorder (DLD) have morphosyntactic difficulties. This is suggested to be the most important clinical marker of DLD. However, whether this is valid for young children with DLD, who are in the earliest stages of their morphosyntactic development, is unclear. This study investigates the complexity, diversity, and accuracy of the morphosyntactic repertoires of 3 to 6-year-old Dutch children with DLD. We compare their morphosyntactic repertoires to those of typically developing (TD) children matched on language level.

Method:

Language samples of 59 children (29 children with DLD and 30 TD children) were analyzed on three dimensions; morphosyntactic complexity, diversity, and accuracy. The TD children and DLD children were language-matched on their morphosyntactic development using the levels of the Dutch version of the Language Assessment, Remediation, and Screening Procedure (TARSP). The children with DLD (age range 2;7-5;4 years, mean age 4;1 years) were older than the language-matched TD children (age range 2;0-3;9 years, mean age 2;9 years).

Results:

Children with DLD are comparable to language-matched TD children in the accuracy and diversity of their morphosyntactic repertoires, but they produce less complex utterances. In the presentation we will also discuss an additional analysis on another group of 30 children with DLD. For these children, we explore the growth patterns of the morphosyntactic complexity, diversity, and accuracy of their utterances over a period of three months.

Conclusion:

The results indicate that children with DLD lag behind in their grammatical complexity as compared to language-matched TD children. In the presentation we will describe the morphosyntactic skills of Dutch children with DLD and what our results mean for clinical practice."

Language sampling analysis and production tasks in preschoolers with DLD: A match made in heaven?

Authors: Luisa de Heer; Iris Duinmeijer, Inge van Dijke, Lisanne Geurts, Anouk Scheffer

"Introduction:

Morphosyntactic difficulties are a core symptom in children with Developmental Language Disorder (DLD). In order to determine treatment goals for this language domain it is vital to have a good understanding of children's linguistic abilities. Language sampling analysis (LSA) is often seen as the gold standard in language assessment, as it reflects abilities in a natural situation. At the same time, language production tasks are frequently used for assessing morphosyntactic skills because they can target specific structures. This presentation delves into the question whether LSA and language production tasks are complementary in the assessment of morphosyntactic skills of young children with DLD.

Methods:

A cohort of 33 preschoolers with DLD (age range 2;10-3;9 years; mean age 3;6 years) were tested with LSA and a newly developed grammatical production task. LSA was performed using the Dutch version of the Language Assessment, Remediation, and Screening Procedure (TARSP). The grammatical production task covered both

syntactic and morphological structures known to be difficult for children with DLD. The occurrence of structures and the identified morphosyntactic developmental stage were compared between these two methods.

Results:

Preliminary results from six preschoolers show that LSA and the production task produce different results in all participants. The production task seems to demonstrate greater sensitivity in detecting the use of structures such as negations, while LSA seems more adept at identifying others structures, such as the use of the copula. In our presentation, we will present the results of the total sample.

Conclusions:

LSA and language production tasks seem to be complementary in assessing morphosyntactic abilities. In our presentation, we will discuss how LSA and language production tasks can be combined to tailor goal setting and evaluation of grammatical interventions for children with DLD to their morphosyntactic abilities."

Effect of a focused stimulation intervention on morphosyntax of children with DLD

Authors: Gerda Bruinsma; Frank Wijnen, Ellen Gerrits

"Background:

Children with Developmental Language Disorder (DLD) struggle to acquire morphosyntactic rules, which limits their ability to communicate. While efficacy studies have demonstrated positive effects of interventions on morphosyntax in controlled research settings, there is a pressing need to assess intervention effects in real-world clinical practice.

The Dutch 'Language in Interaction Therapy' (LIT) aims to incorporate effective elements into a practical therapy approach to stimulate morphosyntax. LIT is based on functional language use within natural contexts, employing an implicit learning approach using focused stimulation, recasting, and production elicitation. We studied the effect of LIT on morphosyntactic development in children with DLD by comparing LIT to usual care speech and language therapy.

Method:

Using a time-series design, fourteen children with DLD received LIT, while another fourteen were in a non-equivalent usual care control group (age range 4;1 – 5;9 years). All children attended schools for special education. The study spanned one school year (40 weeks) with measurements every 4-6 weeks. Initially, both groups received usual care, but the LIT group's therapy was temporarily replaced with LIT targeting morphosyntax for a 12-week period, while the control group continued their usual care addressing various therapy goals. Outcome measures included Mean Length of Utterance (MLU) and morphosyntactic complexity, assessed through spontaneous language samples during play and story retelling, as well as performance on a sentence repetition task.

Results:

Preliminary results indicate that MLUs and complexity increased in both groups. The LIT group did not show significantly more progress than the control group. There was substantial inter-individual variation. We will also present results of additional analysis exploring these differences in relation to both child and speech-language therapist (SLT) characteristics.

Conclusion:

Children with DLD receiving intervention show improvements in morphosyntax. Implementing effective elements from existing efficacy studies does not necessarily increase effectiveness."

Effectiveness of a serious game for grammatical therapy in Dutch school-aged children with DLD

Authors: Rob Zwitserlood; Ingrid Singer, Annemarie Kerkhoff, Ellen Gerrits

"Background:

Serious game 'Bouke Bouwt' to enhance morphosyntax in children with developmental language disorder (DLD) was developed in co-design with researchers, speech and language therapists (SLTs), game designers, and children with DLD. This metalinguistic therapeutic game uses various game-mechanics to keep children motivated. Children are motivated to play games, but SLTs feel uncertain whether games for morphosyntax therapy are effective.

Method:

Twenty-four children with DLD (mean age 8;3 years) participated. Seventeen children were multilingual. All children visited mainstream schools and had SLT in private practices. Using a single-case design, we compared eight weeks of regular grammatical therapy (control condition) with eight weeks of therapy using the game (experimental condition). Both conditions contained home assignments. The weekly 20-minutes sessions targeted various morphosyntactic goals. In the control condition, SLTs used different techniques and programmes, in the experimental condition the game with additional tangible material was used. The game contains targets ranging from simple sentences with 4-6 constituents to complex sentences. Treatment fidelity was monitored with logbooks. Grammatical growth was measured using language sample analysis of story retelling tasks and CELF-5-NL Sentence Repetition task (CELF-5-NL-SR).

Results:

At group level, no difference between conditions were found for CELF-5-NL-SR and for LSA measures MLU, percentages mean constituents, and percentages complex syntax. However, percentage grammatically correct sentences did increase significantly after the experimental condition. Over the whole 16-week treatment period children told longer stories, but no growth in grammatical complexity was found. Furthermore, substantial individual differences between participants were observed. We will present data from the planned retention measurement and from the individual children. Both children, parents, and SLTs were highly motivated to use the game.

Conclusion:

Possibly, sixteen weekly sessions of 20-minutes grammatical therapy with homework is not enough to show growth in complex syntax at group level, in a study targeting diverse morphosyntactic goals."

Symposium: Input studies across languages and communities in Meso-South America

Speakers: Andrea Taverna; Lourdes de León; Cecilia Rojas; Celia Rosemberg; Susana Mendive

The study of children's communicative environments has engendered considerable research over the years with findings indicating there are important cross-cultural differences across communities. The present symposium provides an overview of research in Meso-South America (e.g., Mexico, Argentina, and Chile) that portrays different disciplinary approaches and methods to study input and language development in the context of socio-economic, cultural, and linguistic diversity of this region.

The first presentation focuses on the developmental trajectory underlying the acquisition of verb and noun morphology in children learning Wichi, a polysynthetic language. It assesses the role of input from the environment in the early production of morphology in spontaneous speech data from a longitudinal study.

The second paper examines the role of interactional formats (IF's) in child-directed-communication in Mayan Tsotsil. It identifies the pragmatic functions of IF's and their association with different caregivers of multigenerational families. Results show that grandparents and siblings play key roles in providing IF's to young children.

The third is a case study employing conversational analysis in a corpus of spontaneous interactions in Mexican Spanish, monolingual, educated middle-class families. The analyses focuses on the different types of conversational moves that caregivers deploy in response to toddlers' messages when trying to achieve mutual understanding.

The fourth examines variations in quantitative and qualitative properties of child-directed and overheard speech in a longitudinal corpus of audio recordings in socioeconomically diverse households of Argentinian Spanish speaking toddlers.The analyses also considers SES and input effects on children's vocabulary comprehension.

Finally, the last study examines the relationship between parents' level of education, home literacy environment, and the use of language by adult and child during shared book reading at home in a sample of 114 low-SES Chilean children aged 2 and 3 years.

IASCL 2024 Symposia: Tuesday Afternoon

07/16/2024, from 02:00 PM to 04:00 PM , Room P104

Symposium: Unraveling the predictive role of gesture in children's linguistic and cognitive development

Speakers: Ingrid Vilà-Giménez; Júlia Florit-Pons; Lucía Domingo-Moscardó; Begum Yilmaz; Ying Li

This symposium aims to provide interdisciplinary insights that unravel the predictive nature of gesture in shaping linguistic and cognitive development across different populations, learning environments and developmental stages.

Multimodal skills but not motor skills predict language skills in neurotypical and clinical children

Authors: Júlia Florit-Pons; Mariia Pronina, Alfonso Igualada, Pilar Prieto, & Courtenay Norbury

"Research has examined the relationship between either motor (i.e., non-communicative limb movements) or multimodal skills (i.e., communicative movements involving hand gestures, body movements, and facial expressions) and linguistic skills, highlighting the predictive role of multimodality (see Hübscher & Prieto, 2019), and with unclear findings for motor skills (Leonard & Hill, 2011). To our knowledge, no previous study has assessed altogether the relationship between both motor and multimodal abilities and narrative and pragmatic skills across neurotypical (NT) children and children with neurodevelopmental disorders (NDD), who might have impairments with multimodal and motor skills. For this, the current study aims to compare the predictive power of multimodal versus motor skills for narrative and pragmatic abilities in two groups of children (NT and NDD).

Participants of this study were 140 children (57 girls; 87 NT and 53 NDD) aged 3 to 7, who were administered different tasks measuring linguistic, narrative, pragmatic, multimodal, and motor skills.

A first correlational analysis showed positive correlations between multimodal skills and narrative and pragmatic skills in both populations, while motor skills were only found to positively correlate with narrative skills in neurotypicals. Additionally, two multiple regression analyses were run, with narrative and pragmatic abilities as dependent variables. The models indicated that multimodal, but not motor skills, were significant predictors of both narrative and pragmatic skills. Language, age, and group also contributed to the prediction of narrative and pragmatic competence. The interaction between group and multimodal abilities was not found to be significant, suggesting that the relationship between multimodal and narrative and pragmatic skills is not different depending on group.

The results of the study reveal a close relationship between multimodal, narrative and pragmatic abilities in NT and NDD populations, highlighting that communicative gesture skills (i.e., multimodality), as opposed to non-communicative motor skills, predict narrative and pragmatic competence."

Multimodal narrative perceptive assessment serve to identify language needs of children with NDD

Authors: Lucía Domingo-Moscardó; Júlia Florit-Pons, Pilar Prieto, & Alfonso Igualada

"Multimodal narrative patterns have not been clearly established comparing children with typical development (TD) and neurodevelopmental disorders (NDD), although previous evidences of gesture's role as a language compensation mechanism in NDD children with communication needs. Research has shown that professional judgment serves to identify language needs, but this methodology has not been implemented under a multimodal perspective. This study aims to investigate: a) how a novel multimodal narrative perceptive assessment outcomes converges with independent evidence from multimodal narrative analysis and b) how the two methodologies can predict language needs.

A total of 162 4-to-7-year-old children explained a wordless cartoon. Two assessment methodologies were applied. First, a multimodal narrative perceptive assessment served to rate four different multimodal narration profiles that measured children's gesture use associated with oral information: compensatory (gestures replacing lack of oral information), transitional-learning (gestures reinforcing almost every oral production), discursive (gestures adding relevant information) and self-regulatory (gestures as an emotional regulator). Second, a multimodal narrative analysis measured microstructure (lexical, syntactic, discourse-markers and referents), macrostructure and gesture measures (rate, type, semantic function and self-adaptors).

Preliminary results with 10 TD and 10 NDD children revealed that both multimodal assessments converged evidences to identify children's language needs. First, the transitional-learning profile was more frequent in the NDD group. Also, there was a positive correlation between compensation profile with sentences without verbs and different gesture measures. In the TD group, there was a negative correlation between discursive profile and self-adaptors use. Second, the multimodal narrative analysis showed that the NDD group had lower macrostructure and microstructure scores (lexical, discourse-markers and referents) and more extending function gestures than the TD group. These findings showed that a multimodal perceptive assessment is a valid and rapid measure of language abilities. Future regression analyses will investigate whether both multimodal methodologies can predict children's language needs."

The link between fluent gesture rate, vocabulary and narrative skills in 7- to 9-year-old children

Authors: Ingrid Vilà-Giménez; Pilar Prieto

"Previous research has highlighted the strong link between both receptive and expressive vocabulary skills and narrative performance (Uccelli & Páez, 2007). While longitudinal evidence indicates that gestures produced in narrative retellings can predict narrative performance (Demir et al., 2015), the concurrent association between narrative abilities and gesture rate remains unclear. Our study aims to assess the link between 7- to 9-year-old children's narrative structure and fluency scores, and their vocabulary knowledge and production of fluent referential iconic and non-referential gestures.

Participants were 83 children (43 girls) aged 7 to 9 who completed a narrative retelling task. All narratives (n = 166) were coded for duration, narrative structure and fluency using standard scales, and for referential iconic (referring to semantic content in speech) and non-referential (lacking semantic content) gesture rates. Receptive vocabulary was assessed using the Peabody Picture Vocabulary Test-III (Dunn et al., 2010) adapted into Catalan.

A set of six GLMM analyses were conducted, with narrative structure and fluency as dependent variables. Two initial models showed a positive association between vocabulary and narrative structure scores (R^2 = 60%) and a negative association between narrative duration and fluency scores (R^2 = 74%). When referential iconic gesture rate (n = 212) was introduced in the two models, both vocabulary and referential iconics positively predicted narrative structure (R^2 = 48%). Referential iconics were also positively associated with fluency, while narrative duration showed a negative association with fluency (R^2 = 69%). Conversely, the addition of non-referential gesture rate (n = 236) did not account for additional variance in either narrative structure or fluency scores.

While our findings corroborate previous research in highlighting the importance of vocabulary as a good predictor of better-structured narratives, they crucially provide novel evidence for the predictive role of referential iconic gesture rate in both narrative structure and fluency scores."

The Predictive Role of Gestures and Parental Input in Mathematical Development:An Intervention Study

Authors: Begum Yilmaz; Işıl Doğan, Emel Nur Kaya, Dilay Z. Karadöller, Ece Demir-Lira, & Tilbe Göksun

"Early mathematical skills are crucial for later academic achievement. One of the predictors of early variability in children's proficiency in these skills is parental numerical input (Levine et al., 2010). Parents provide numerical input through different modalities, such as speech or gestures (Karadöller et al., under review). Previous work suggests that both math instructions accompanied by gestures (Singer & Goldin-Meadow, 2005) and children's gesture use (Novack et al., 2014) help them solve math problems. However, research remains scarce on the relation between multimodal input, children's gesture, and subsequent math proficiency. We examined the role of multimodal input on children's math development through a parent-administered book-reading intervention study. We assessed how preschoolers' gesturing and parental use of gestural math input interactively relate to children's math development.

Sixty-three children (33 girls, M age=49.9 months, SD=3.68, Range:45-59) were pretested on their verbal counting and cardinal principle knowledge (i.e., "What is on the card?") tasks, followed by a six-week book-reading intervention period. Intervention Group 1 received a book with numerical language prompting parents to use gestures; Intervention Group 2 received the same book and asked not to use gestures. The control group received a book without numerical language and gesture instructions. At the end of the intervention period, children were post-tested on mathematical proficiency. Posttest analyses are ongoing to investigate the group differences with varying parental input patterns. Preliminary results for the pretest showed that children's gestures while labeling objects were related to their cardinal principle knowledge, regardless of the group (r=-.380, p<.01). Children who used more gestures had lower performance on "What is on the card?" task after controlling for age and verbal counting skills (p<.01). Contrary to previous work, our findings suggest that

children might use gestures to compensate for their proficiency in mathematics, highlighting the differential functions of gestures in mathematical development."

Neural synchrony during parent-child spatial problem-solving: Role of parent gesture strategy

Authors: Ying Li; Ece Demir-Lira

Synchronous interactions between parent and child are fundamental for children's development. Prior work examining synchronous interactions focused on the relations to children's social-emotional development (Nguyen et al., 2020), but such interactions play a vital role in children's cognitive development as well (Casey et al., 2000; Mahy et al., 2014). Gestures constitute a pivotal element in parent-child communication. However, little is known about how and why gesture might relate to the neurocognitive basis of parent-child interactions. Here we leveraged fNIRS (functional near-infrared spectroscopy)-based hyperscanning, which measures neural data from all participants simultaneously using multiple devices, to assess the role of parental gesture in semi-natural parent-child interactions in the laboratory. We applied fNIRS-based hyperscanning in a cooperative spatial task (tangram puzzle). Two main brain areas from both hemispheres, the dorsal lateral prefrontal cortex (dlPFC) which is relevant to problem-solving, and the temporoparietal junction (TPJ) area which is relevant to social mentalization, were covered using 8 by 8 fiber distribution. During the task, parent-child dyads were asked to cooperate to solve the tangram puzzle together. All task-relevant parental gestures during the interaction were coded based on video recordings. Neural synchrony between the parent and child pairs was measured by WTC. The results revealed higher WTC scores in regular pairs than in random pairs, $(F(1, 287) = 99.2, p < 0.001)$. Gesture played a role leading a higher overall WTC $(t = 2.555, p < .05)$. Also, gesture negatively predicted slope of WTC during the interaction $(t = -3.251, p < 0.01)$. Although WTC decreased during the interaction, presence of gesture diminished the decreasing slope WTC compared with no-gesture. WTC predicted dyad's performance on task (number of puzzles solved). Overall, our study is the first study to pinpoint how gesture relates to dynamic changes in neural synchrony during parent-child interactions using fNIRS-based hyperscanning.

Symposium: Discourse development: argumentative, explanatory and narrative skills

Speakers: Maia Migdalek; Alejandra Stein; Alejandra Meneses; Jarmila Bubikova-Moan; Martha Shiro

The purpose of this symposium is to present an integrating view of discourse development by reviewing recent studies on how children acquire argumentation, explanatory and narrative discourse skills.

A longitudinal study of the discourse units in mealtime family interactions

Authors: Alejandra Stein; Maia Julieta Migdalek, Celia R. Rosemberg

"The aim of the study is to contribute to the research on the discursive environment at home in which the development of narration, argumentation and explanation takes place during preschool years. The development of these discursive forms is relevant to the linguistic, cognitive and social dimensions of child development and to how their mastery constitutes a requirement to participate in classroom practices (Heller, 2014). Although the discursive units are intertwined in everyday interactions, previous studies have mainly analyzed each form in isolation without addressing how they are deployed together and how they configure the texture of the conversation.

In the present paper we analyze the structural and interactional organization of the narratives, explanations and arguments produced during mealtimes in Argentinian Spanish monolingual homes. The corpus consists of 22 mealtime situations audio-recorded in 11 middle-income households at two time points, when children were 4 and 5 years old (Author, 2013-2019). Following Quasthoff et al. (2017) we identified the discourse units as segments delimited from the surrounding turn-by-turn talk, each type serving a different communicative function.

Preliminary findings from the statistical analysis carried out on 181 discourse units showed that narratives were the most frequent and complex units (they included other embedded units) as compared to argumentations and explanations. Most narratives were intraconversational, while explanations and argumentations were mainly triggered by an object or an action salient in the situation. Children globally initiated 24% of the units. They contributed to most of the narrative accounts, but mainly listened to the argumentative and the explanatory units produced by adults. The findings of this study contribute to the understanding of home discursive practices, which are relevant to the requirements of classroom discourse, from a perspective that comprehensively contemplates different forms of discourse, as well as diverse interactional and structural aspects involved."

Time reference in justifications as argumentative strategies used in disputes of children at play

Authors: Maia Migdalek; Florencia Alam, Martha Shiro, Celia R. Rosemberg

At an early age already, children at play participate in confrontational interactions using argumentative strategies. As they take a stance in a dispute, they justify their position in different ways. The purpose of this study is to determine the time framework in which the justifications are inserted and how they contribute to the child's argumentative sequence. Our hypothesis is that justifications that refer to the past imply the reconstruction of the event from a specific perspective; reference to the future or hypothetical events serve as justifications of a course of action that can be perceived as acceptable or not; reference to the present brings evidence supported by some aspect of the situational context of the interaction; non-temporal justifications display generalizations that the child has derived from the social and natural environment. Focusing on how children choose the time reference in justifications helps us understand the type of evidence they consider relevant to defend their point of view and to what extent this choice contributes to the acceptance or not of their argument. Furthermore, we can ask ourselves whether the children's socio-economic status influences the choice of time reference in the justifications. Thus, we analyzed 432 hours of recordings of 37 Argentinian 4 year-old children from a socioeconomically diverse population (Author, 2005-2012) to extract the justifications present in disputes during naturalistic play situations. Our preliminary findings suggest that most children at this age choose justifications entrenched in the present, whereby the evidence is based on the situational context. However, the mid SES children used an anticipatory framework more frequently than their low SES peers, indicating thus possible differences in the cultural practices of the two groups with respect to what constitutes a strong evidence in the argumentative interaction.

The development of scientific explanation: relations between genre and lexicogrammatical resources

Authors: Alejandra Meneses; Maximiliano Montenegro, Evelyn Hugo, Daniela Acevedo, Javiera Figueroa

This research explores language development during the school-age years, focusing on extended discourse, decontextualized and academic language (Grøver et al., 2019). Students have difficulties when they need to engage in this type of discourse genres at school because they require new linguistic forms and functions (e.g., Silvestri, 2002; Uccelli, 2019). One of the pivotal discourses learned during primary education is explanation, particularly relevant to science learning. Scientific explanations require students to construct causal mechanisms to display how scientific phenomena occur (affirmation), supported by empirical scientific data (evidence) (Fitts et al., 2020; McNeill & Krajcik, 2012). In this study, 117 Chilean boys and 152 Chilean girls in 4th grade participated in a language and science-integrated learning sequence. Each student wrote four explanations, two at the beginning and two at the end of each instructional unit. A total of 986 scientific explanations were coded by their use of genre (affirmation and evidence) and lexicogrammatical resources (scientific vocabulary, cross-disciplinary vocabulary, metadiscursive vocabulary, nominalizations, causal links, evidential markers, self-mentions, and contextualized language). The results indicated a significantly higher dominance of the final explanation over the initial explanation in affirmation construction, particularly in the identification of the relevant components ($F(1, 487) = 334.55$, $p < .001$, $\eta2 = .442$), as well as in producing evidence, especially in the specification of the data used ($F(1, 487) = 295.12$, $p < .001$, $\eta2 = .429$). Regression models revealed that scientific vocabulary, causal links, and a lower presence of metadiscursive vocabulary and contextualized language predict affirmation quality ($R2=0.376$). In comparison, evidence quality ($R2=0.698$) is predicted by evidential markers, metadiscursive vocabulary, and causal links. These findings emphasize the distinct roles that various resources play in constructing disciplinary genres.

Children's argumentative competence: untangling the concept

Authors: Jarmila Bubikova-Moan;

Much like argument and argumentation, argumentative competence (AC) is a complex and contested term. It has, for example, been conceptualized as a threefold set of argumentation-relevant skills at play in a person's argumentative performance: metacognitive (declarative), metastrategic (procedural) and epistemological (Rapanta, Garcia-Mila & Gilabert, 2013). The manifestation and further development of AC as a metaknowing competence has been studied especially in children in early and late adolescence, considered developmentally ready for argumentation. Referred to as the skills-view of AC, it has been questioned, and investigations of argumentative contributions in children as young as preschool have been offered. Providing a broad conceptual overview of advances in the field, a recent meta-synthesis has documented that studies of argumentative discourse in the youngest age groups have been on the rise especially in the last decade. Nonetheless, the review has also warned of the terminological and conceptual heterogeneity in the field and called for a careful scrutiny of the potential overlap between central terms and concepts in circulation. This paper aims at taking a closer look at the terminological and conceptual conundrum by reviewing some of the argumentation-related terms in use in early childhood education and care, such as sustained shared thinking, inferential thinking and exploratory talk, and by examining in more detail key empirical and theoretical literature, concerned with conceptualizing what AC in the early years may entail. Based on this, a tentative conceptualization of AC will be proposed that takes into account the youngest children's argumentative contributions and accommodates them as competent arguers in their own right. Practical implications for future studies of children's AC will also be considered.

Symposium: Using multimodal corpora to study language development

Speakers: Gabriella Vigliocco; Ruthe Foushee; Ingrid Vilà-Giménez; Abdellah Fourtassi

Investigations of language and communicative development using corpora of multimodal language

The impact of caregiver's multimodal behaviours on word learning: Insights from the ECOLANG corpus

Authors: Gabriella Vigliocco; Ed Donnellan, Yan Gu, Antonia Jordan de Barros, Beata Grzyb, Gwen Brekelmans, Margherita Murgiano

Studies have shown the importance of caregivers' multimodal behaviours (e.g., prosody, gestures, gaze) on children's word learning. However, most studies focus on only one specific behaviour (e.g., only prosody). Here, we investigate which multimodal caregiver behaviours best predict word learning and vocabulary growth. Using data from the ECOLANG corpus, we analysed caregiver (N = 36) behaviours in semi-naturalistic interactions with their child (3 to 4 years old) in which they talked about known and unknown toys. Measures of learning of the unknown words (using a picture-word matching task after the interaction) and of vocabulary (at the time of testing and one year later) were obtained. We analysed caregivers' use of multimodal cues while labelling the objects, specifically their use of yes/no questions, pitch, representational gestures, pointing, object manipulations and gaze. We separately assessed the impact of the frequency/mean scores for each cue and difference scores (differences between caregiver behaviours when naming known and unknown toys). We used logistic mixed effect models to assess the effect of multimodal cues on immediate learning, and linear regression to assess vocabulary growth. Preliminary results show that only caregivers' pitch, use of yes/no questions and pointing predicted children's word learning. In particular, higher pitch when labelling unknown toys predicted immediate word learning while the pitch difference between known/unknown toy's labels predicted both immediate learning and vocabulary growth. Furthermore, the difference in use of yes/no questions between known and unknown toys predicted immediate learning, while the frequency of yes/no questions when naming unknown toys predicted vocabulary growth. Lastly, caregiver pointing predicted immediate learning and vocabulary growth, but in the opposite direction from pitch: the more they pointed towards known toys, the better children's learning of novel toy labels. Overall, these results provide evidence for the important role of multimodal caregiver behaviours on children's lexical development.

Nonverbal communication between hearing caregivers and their deaf and hearing children

Authors: Ruthe Foushee; Michelle Madlansacay, Zena Levan, Susan Goldin-Meadow

"What is caregivers' role in language acquisition? The literature often emphasizes the caregiver as a source of linguistic feedback and language data. Here, we turn our attention from caregivers' provision of linguistic evidence to examine the nonlinguistic evidence that caregivers may provide children regarding what it is possible to communicate, and what they can expect from future interlocutors.

To do so, we capitalize on data from two longitudinal studies featuring naturalistic videorecordings of children and caregivers (Goldin-Meadow & Mylander, 1984; Goldin-Meadow et al., 2014). We focus on caregivers' responses to early (often partial or imperfect) communicative attempts in: (1) deaf children born to hearing parents—particularly relevant because these children cannot easily process the verbal linguistic evidence that their parents provide—and (2) hearing children of hearing parents. To shed light on the role of nonverbal communication in the development of language, we match the children in these two groups on the basis of syntactic complexity (MLU in gestures and words, respectively), and compare the behavior of their hearing caregivers along two dimensions: contingency, and pragmatic appropriateness.

Method. For each child communicative attempt (an utterance and/or gesture), we code contingency based on whether the parent acknowledges or responds within 2s—and if so, in what modalities (e.g., touch, speech, gesture, action). Pragmatic appropriateness indexes caregivers' attributions of communicative intent to their children, and their visible efforts to interpret them. To code it, two research assistants first independently 'gloss' the communicative attempt, then evaluate the relevance and sensitivity of the caregiver's response relative to this interpretation.

We present descriptive results revealing both commonalities and differences in the multimodal feedback that hearing caregivers provide their deaf and hearing children, as well as statistical tests using these dimensions of caregiver nonverbal responsiveness to predict conversational, structural, productive, and semantic language outcomes in children."

Children's multimodal development: Insights from a corpus of Catalan narrative speech

Authors: Ingrid Vilà-Giménez; Júlia Florit-Pons, Patrick L. Rohrer, Sara Coego, Pilar Prieto

"Studying gesture-speech interactions at the discourse level is a necessary step for gaining a better understanding of how children acquire multimodal language. The aim of this presentation is twofold: (a) to introduce the features of the ""Audiovisual corpus of Catalan children's narrative discourse development"" (Vilà-Giménez et al., 2023, https://osf.io/npz3w/); and (b) to delve into the specific contributions made using this corpus.

The audiovisual corpus consists of 332 narratives carried out by 83 children (43 girls) at two time points in development (at 5-6 years old and two years later). All narratives were annotated for prosody (Cat_ToBI), gesture referentiality (referentials and non-referentials, following the M3D labeling system), and Information Structure (IS; LISA guidelines). On the basis of these comprehensive annotations, five studies were carried out. The first study explored gesture-speech temporal alignment patterns, revealing that by ages 5-6 children already closely associate the stroke of both gesture referentiality types with pitch-accented syllables. The second and third studies investigated the relationship between IS, prosody and gesture referentiality at both time points, and found that while gestures are sensitive to IS categories, pitch accentuation is not a stable marker of IS. More refined analyses are still ongoing. The two final studies demonstrated that (a) children's referential iconics produced in narratives at 5-6 years predict their narrative structure scores two years later; and that (b) referential iconics produced at 7-9 years are positively associated with both narrative structure and fluency scores at that age.

Altogether, these studies help refine our knowledge about multimodal development. In this presentation, we will delve into these findings and explore other possibilities that this longitudinal narrative corpus offers for gaining valuable insights into the multilevel analysis of discourse speech in the window spanning between 5 and 9 years of age."

A developmental corpus of face-to-face natural conversations in middle childhood

Authors: Abdellah Fourtassi;

"Existing studies of naturally occurring talk-in-interaction have largely focused on the two ends of the developmental spectrum, i.e., early childhood and adulthood, leaving a gap in our knowledge about how development unfolds, especially across middle childhood.

The current work contributes to filling this gap by introducing a developmental corpus of child-caregiver conversations at home, involving groups of children aged 7, 9, and 11 years old (N=30). We capitalized on recent advances in mobile, lightweight eye-tracking and head motion detection technology to optimize the naturalness of the recordings, allowing us to obtain both precise and ecologically valid data. Further, we mitigated the challenges of manual annotation by making full use of large data processing tools in speech processing and computer vision.

In order to demonstrate the usefulness of this multimodal corpus in the study of face-to-face communicative development, we present preliminary results on children's use of gaze to regulate conversational turn-taking. Methods. To quantify gaze aversion, we used computer vision tools to categorize continuous gaze data from the mobile eye-tracking device. First, the face of the interlocutor was detected from the egocentric video camera using a state-of-the-art computer vision algorithm for face detection. Second, the gaze coordinate data (overlaid on the pixel space of the egocentric video) were used to determine when gaze coordinates did or did not intersect with the interlocutor's face. Results. Preliminary results show that older children (compared to younger ones) and adults (compared to children) spent more time gazing at interlocutors while listening compared to speaking, suggesting that children in middle childhood are still developing in terms of the systematic use of gaze in regulating conversational turn-taking."

Symposium: Applying the LUNA framework to analysing children's personal narratives: Clinical implications

Speakers: Marleen Westerveld; Vani Gupta; Sara D. Ferman; Mateja Gabaj; Kristine Jensen de López

This symposium illustrates how the LUNA framework may be used when analysing personal narrative samples produced by children with and without identified language difficulties across pragmatics, macrostructure planning, propositional, and/or linguisti

A systematic review of methods for eliciting and analysing school-age children's personal narratives

Authors: Vani Gupta; Marleen Westerveld, Stephanie Malone

"Talking about past experiences, also referred to as personal (event) narratives, is a key form of human interaction across age, culture, and community. To date, personal narrative development has been researched across different disciplines, using a range of terminology and definitions, making it difficult for speech therapy clinicians to translate the findings into practice. To address this gap in present knowledge we systematically reviewed the literature regarding personal narrative assessment and analysis methods, focusing on children ages 4 to 18 years with and without identified language difficulties or disorders.

The pre-registered systematic review of six databases yielded 17,531 articles and theses published in English. Only empirical studies in which children talked about a specific event that had previously happened to them were included (i.e. considered as 'personal narratives'). Included studies were further required to analyse language structure (e.g., macrostructure), form (e.g., syntax, morphology), or content (e.g., topics, themes, vocabulary) within the personal narratives elicited. Studies in which adults (including caregivers) elicited, prompted or co-constructed personal narratives were included, but studies in which only the adult's narrative was analysed (and not the child's) were excluded.

After title and abstract screening, 412 articles met our selection criteria for full-text screening; After full-text screening 207 articles were eligible for inclusion in the systematic review. Data extraction and synthesis of the data includes detailing the assessment tasks as well as the analysis methods. Data analysis methods will be categorized into LUNA components (pragmatics, macrostructure planning, propositional, and linguistic). Further, the review will identify which measures were found to differentiate between children with identified language difficulties and their peers without language difficulties. The presentation will provide a detailed overview of the findings, outline which LUNA components have been studied, and identify potential gaps in the existing research. Clinical implications will be highlighted."

Personal narratives of Hebrew and Arabic speakers in Israel: Investigating pragmatic and linguistic

Authors: Sara D. Ferman; Khaloob Kawar

"This study investigated how the discourse context (face-to-face [F2F] vs. tele-communication [TC]) affected the linguistic performance of two groups of 10-year-old children living in Israel (Hebrew-speaking Jewish children and Arabic-speaking children) and whether children's language/culture influenced their performance. A total of 38 Arabic-speaking and 51 Hebrew-speaking children produced personal narratives in response to the six emotion-based prompts of the Global TALES protocol. Forty participants were assigned to a TC group (via Zoom) and 49 to a F2F group. Personal narratives were analyzed on the following linguistic measures: total number of words (TNW), total number of utterances (TNU), number of different words (NDW), mean length of utterance in words (MLU-W). At macrostructure level each narrative was categorized according to its topic.

Analysis revealed no significant main effect of discourse context (F2F vs TC) on any of the linguistic measures. However, discourse context influenced the chosen topics. Furthermore, the Hebrew-speaking children obtained significantly higher scores compared to their Arabic-speaking peers, and language/culture also influenced the chosen topics. Finally, a significant interaction effect between language/culture and discourse context was found, with a significant main effect for the Arabic speaking children only. The Arabic-speaking children produced more utterances in the F2F condition compared to TC.

These findings suggest that the discourse context (pragmatic component) may influence (1) the topics 10-year-old children choose to narrate (macrostructure), and (2) the linguistic performance of children from some cultures more than others. These results will be discussed in light of potential differences in the interpersonal quality of communication between TC and F2F discourse contexts, taking differences between the collectivist-Arab and individualistic-Jewish cultures into account. Altogether, the results support the notion of the LUNA

framework that pragmatic factors (discourse context) and language/cultural factors should be considered when analyzing the linguistic features of children's personal narrative discourse performance."

Emotional valence of topic in the personal stories of children with developmental language disorder

Authors: Mateja Gabaj; Jelena Kuvač Kraljević, Marleen Westerveld

"When children are encouraged to tell personal event stories, they need to access their episodic memory to select a topic (either pleasant or unpleasant) and convey the semantic content of the event in a coherent and linguistically appropriate manner. Although it is known that children with developmental language disorder (DLD) have difficulty with linguistic aspects of discourse, this is the first study to examine both macrostructural planning and propositional components as per the LUNA framework. The macrostructure component investigates what children choose to talk about (topic or story content). The propositional component includes the semantic content needed to relate a past personal event about the chosen topic that can be categorised as positive or negative depending on emotional valence.

The aim of this study was to determine (1) the topics that children with DLD talk about in their personal narratives, (2) the frequency with which they recall (un)pleasant experiences with positive or negative outcomes, compared to children with typical language development (TLD). The study involved 32 children with DLD (M = 10;09 years) and 33 children with TLD (M = 10;01 years) whose personal narratives were elicited using six emotion-based prompts from the Global TALES protocol.

Both groups of children share similar topics, such as academic achievement or success in sports or competitions, especially in stories prompted by negative prompts or referring to problems and important events. In terms of the type of event and the emotional ending of the story, children showed the greatest variability when talking about important events. Overall, children with DLD talk more often about unpleasant events than pleasant ones, which, however, have a positive outcome in the majority of cases (53.33%). In contrast, children with TLD talk more often about pleasant events, with a higher proportion of positive endings (76.26%). Clinical implications are discussed."

The personal narrative skills of school-age students on the autism spectrum

Authors: Marleen Westerveld;

"Sharing personal experiences through storytelling (personal narration) is a fundamental aspect of social communication. Despite the importance of personal narrative proficiency for participating in daily activities, and the knowledge that many autistic children show challenges in social communication, research into the personal narrative skills of this group of children is limited. The current study addressed this knowledge gap by analysing personal narrative samples produced by autistic children in response to the six emotion-based prompts of the Global TALES protocol.

Ten autistic children (8 male) participated (ages 7;11 – 12;05). All children scored within age expectations on tests of receptive vocabulary (PPVT) and nonverbal cognition. All personal narratives (stories; max 6 per child) were transcribed and coded for topic. Stories containing at least two past tense actions were analysed at macrostructure level (global coherence / theme), and propositional level (context, chronology), using the Narrative Coherence Coding Scheme (NCCS).

The autistic children produced 46 personal narratives (max 60 = 77%), compared to a 95% response rate in our sample of 44 ten-year-old Australian children. Further, 50% (30) of the children's stories did not contain two actions (thus not scored on the NCCS). Global coherence (context) ranged between 0 (23%; difficult to identify topic), 1 (66%; identifiable topic with only limited evidence of causal connections or evaluations, and 2 (10%; substantial development of topic). At propositional level, 70% of stories contained no information about time or place; with time and place mentioned in two stories. Finally, 60% of the stories contained minimal/no information about temporal order, with 13% of the stories containing an identifiable timeline.

The discussion will highlight the importance of personal narrative coherence for supporting social communication. A case example will be provided to illustrate how analysing personal narratives at macrostructure planning and propositional levels may inform clinical assessment and intervention practice."

Language and narrative skills of Danish school children with DLD: Investigating child profiles

Authors: Kristine Jensen de López; Hanne Søndergaard Knudsen

"Language and narrative skills are often investigated as separate domains and evaluated by comparing group results rather than within child profiles. This study provides a detailed analysis of individual children's narrative

skills across different genres (pragmatics) at linguistic, macrostructure planning, and propositional levels and compares their performance to standardized language results and parental reported skills. It also investigates topics addressed in personal narratives.

Five Danish monolingual children (2 girls) with Developmental Language Disorder (DLD), aged 7- 10, participated in a range of language tasks (CELF; Parental reported Language on the CCC and the 5-15; Narratives: Global TALES personal narratives, MAIN telling, BUS retelling). All language samples were scored and/or coded, transcribed and analyzed for linguistics (MLUw, number of different words [NDW], errors), macrostructure, topic, and global coherence (CUDP-A) where relevant.

Results from standardized language tests and parent-reported language measures showed substantial language difficulties of all children compared to typically developing peers. The preliminary results comparing different narrative genres show that for personal narratives children with DLD overall addressed topics like those identified cross-linguistically in previous studies with typically developing children. However, some responses reflected lack of propositional and semantic knowledge necessary to respond to the prompts (e.g., proud). Global coherence in the children's personal narratives ranged between 48-73% and did not align with parental reported coherence on the CCC. Children with the lowest standard scores on CELF were most challenged in producing narratives, although this was not consistent.

Across the three narrative genres, despite individual differences, children generally showed higher MLUw in personal narratives compared to their fictional narrative re/tells. There were large variations in NDW produced within each of the narrative genres, but relatively consistent productions of error types. The presentation will provide case examples of language profiles of Danish children with DLD to illustrate these results."

Symposium: Developing materials on healthy language development with and for Indigenous communities

Speakers: Shanley Allen; Randeana Peter; Melvatha Chee; Rebecca Defina; Catherine Dench; Carmel O'Shannessy

This symposium focuses on the development of language-related materials in Indigenous communities around the world, in collaborations between community members and academics, to revitalize and strengthen the acquisition of those languages.

t'ut'a'thut 'un thathun: Beatboxing exercises for children learning Hul'q'umi'num' sounds

Authors: Randeana Peter;

"hakwush 'un shqwultun 'i' thuythut 'un sqwal. 'e'ut wulh t'ut'a'thut 'un thathun 'i' 'un tuhwthulh 'i' 'un shhw'uthqun. This is how we begin our Hul'q'umi'num' beatboxing alphabet. I am a Kindergarten and Grade 1 Hul'q'umi'num' teacher at the Quw'utsun Smuneem Elementary School in my home of Quw'ustun (Cowichan). The Hul'q'umi'num' language spans from Snuw'nuw'us (Nanoose) to Me'luxutth' (Malahat) on Vancouver Island in Western Canada, and is an Indigenous Coast Salish language. Our communities have been working on revitalizing our language for many years.

My research is on how children learn sounds of Hul'q'umi'num', which uses glottalization, ejectives, and complex consonant clusters not found in English. Pronouncing Hul'q'umi'num' involves learning new muscle movements and I remembered what people said about speaking it: "Our people, when they spoke, it was like they were singing to each other," and "the muscles we are using [when speaking Hul'q'umi'num'] aren't used all the time." This had me thinking about when my kids would hold their throat because it was sore.

I discuss here how I teach beat boxing warm-ups to help us speak and keep our Hul'q'umi'num'vocal muscles in shape. In this presentation, I will share examples of nonsense words and sentences that keep us walking around the house practicing everyday, reinforcing the kinds of movements that help us produce the new sounds. For example, in the following passage, all the consonants sounds are used for making beats and the vowels are used for harmony or a transition:

p'uq' (white) lhsuq' (half) shewuq (carrot)

p', q', s, lh, q, sh, w - consonants

u, e - vowels

Our Hul'q'umi'num' speaking at home and school has become stronger because of these beatboxing activities that prime our muscles to work in a Hul'q'umi'num' way, and has made us - both children and adults - more confident speakers."

Linguistic investigation at Saad K'idilye: Developing evidence-based pedagogy to support urban Diné

Authors: Melvatha Chee; Warlance Chee (Saad K'idilyé), Cheryl Yazzie (Saad K'idilyé), Alec Goldberg (University of New Mexico)

"In collaboration with Saad K'idilyé, the Indigenous Child Language Research Center at the University of New Mexico has been documenting caretaker-child speech interactions. At Saad K'idilyé, in Albuquerque, NM, USA, children up to eighteen months of age are immersed in Diné Bizaad, the Navajo language. This presentation is based on one year of documentation from which a cross-section of 6 hours of video recordings were closely analyzed.

Through this work we discovered a set of frequently-produced words in child-directed speech that could not be easily categorized as verb, noun, or particle. These words are unique as they express a complete thought and are used to convey several but intersecting concepts. We refer to this interesting set of words as Navajo holophrases.

Navajo holophrases cannot be inflected, nor do they alternate form. These words recur throughout each day and are among the most frequent words in child-directed speech, precisely because they have a simple form alongside a salient meaning.

For example, na' 'here, I give you this' has been identified as the fourth most common word in child-directed speech at Saad K'idilyé. Na' was also produced by children within several months of being enrolled. The use of

na' circumvents the necessity to classify an object as the Navajo classificatory verb system typically requires. Rather, na' can function for the giving of any object.

Thus, these words may allow the language to be penetrated and the acquisition process to begin. This presentation will show how we take this information and use it to teach parents so that they can use these Navajo holophrases with their children in the home. Saad K'idilyé also used this set of words to create original resources for speaking with the children in their care."

Pitjantjatjara scaffolding techniques for early childhood education

Authors: Rebecca Defina; Katrina Tjitayi (Pitjantjatjara Yankunytjatjara Education Committee)

"Of the hundreds of Indigenous languages spoken in Australia before colonization, only 12 are still being learnt by children as a first language (AIATSIS 2020). Pitjantjatjara is one of these few languages and is in a relatively strong position within this context. It is used as the main language of everyday life by around 3000 people across the vast desert region of the Anangu Pitjantjatjara Yankunytjatjara (APY) lands in central Australia. Across the APY lands, there is also a network of early childhood education centers with strong Anangu (preferred self-reference for Pitjantjatjara-speaking people) in educator and leadership positions. However, the training, planning, and design of these programs is often led by research-informed pedagogy from other cultures and languages, particularly from Europe.

In this collaboration, we combine research on Pitjantjatjara child language acquisition with experience in Anangu early childhood education in order to create strength-based, locally appropriate resources. We examined a 15-hour longitudinal corpus of Pitjantjatjara children aged 10 months to 5 years interacting with their peers and caregivers. We described the scaffolding techniques commonly used by adults to engage children in talk and facilitate language acquisition, such as questions, attention direction techniques, and prompting. We then utilized this documentation to build research-informed resources and tools for Anangu and non-Indigenous early childhood educators working with Pitjantjatjara-speaking families. These resources include video examples and discussions, as well as suggested activities for classrooms based on local scaffolding practices.

This work seeks to build on the strengths of the Pitjantjatjara-speaking community and the research resources currently available, to build culturally and linguistically appropriate research-informed early childhood education resources. A main aim is to combat the deficit-based framing that is common in Indigenous education contexts throughout Australia."

A collaborative process to formalize an Inuktitut child language developmental sequence and support

Authors: Catherine Dench; Annie Novalinga & Maaji Putulik & Malaiya Weetaluktuk (Inuulitsivik Health Cent), Nunia Anoee & Rhoda Karetak (NU Board of Ed), Shanley Allen (U Kaiserslautern), Shirley Tagalik (Aqqiumavvik Society)

"Inuktitut, a polysynthetic language, is the second largest Indigenous language in Canada, spoken by nearly 40,000 Inuit. With a very young population, and concerns about language loss, there is a pressing need for culturally and linguistically appropriate resources for early assessment and intervention in Inuktitut. In this talk, we describe the process we used to develop a community-validated and accessible Inuktitut preschool language development chart, as well as culturally appropriate language stimulation ideas for parents and educators.

Over the last forty years, a wealth of information about Inuktitut child language development has been gathered. Much of this information comes from Inuit elders and child development support workers. For example, Inuit Elders in Nunavut documented traditional childrearing knowledge and advice over a series of meetings, including information about child language development. This information was later published as a series of pamphlets organized by age and incorporated into Inuit Qaujimajatuqangit – the unified system of beliefs and knowledge characteristic of the Inuit culture, which is translated as "that which Inuit have always known to be true." Another set of information on Inuktitut language development comes from extensive research by Allen, Crago and colleagues in small communities in Nunavik in Quebec, which has been published in a series of academic journal articles (e.g., Allen, 2017).

In a process based on Pence and Ball's (2006) Generative Curriculum Model, we engaged in the collaborative construction of a set of language development materials combining knowledge from both Inuit knowledge and academic research, including community validation of the materials. This approach emphasizes "how Eurowestern self-assertive thinking and values can exist in creative dialogue with the more integrative thinking and values that are characteristic of many Indigenous cultures, resulting in positive transformations for all individuals, institutions, and communities involved" (Ball, 2004)."

Development of a CDI for multilingual children speaking Indigenous languages in Central Australia

Authors: Carmel O'Shannessy; Vanessa Davis & Denise Foster (Tangentyere Research Hub), Jessie Bartlett & Alice Nelson (Red Dust Role Models)

"There is a focus in Australian national government policy on early childhood development, yet little is known about young children's paths of language development in Indigenous languages. This includes the language children hear directed to them, and that they therefore learn. Contexts in which there is language change and where people speak in more than one language are even less well understood.

There are MacArthur Bates Communicative Development Inventories (CDI) for about 90 languages world-wide, but until now none for the languages spoken in Central Australia. A CDI is a list of the most common words that young children up to age 3 years are likely to know and say.

In the Central Australian town of Alice Springs Indigenous children grow up hearing and learning more than one language, with differing degrees of multilingualism, and with differing access to literacy practices in their home languages. This context presents a specific challenge for describing children's paths of language development and for developing a tool such as a CDI.

A team of Indigenous and non-Indigenous researchers worked with 22 families for data collection. The sessions with families had three parts: a) an interview where caregivers were asked which words their young children know and say, b) caregivers talking with the children about textless picture books, and c) free play and talk between children and families. The sessions were transcribed, and translated where they were not in English.

From this, an online multilingual 'spoken' CDI for five of the languages spoken by young children in Alice Springs has been developed, along with other resources in preparation. In this talk we outline the methods of the study and present the CDI and work in progress.

https://little-kids-learning-languages.net/

https://mywordlist.app/app/little-kids-word-list"

Symposium: Cross-linguistic comparison in studies of morphosyntactic acquisition

Speakers: Virve Vihman; Gordana Hrzica; Adele Vaks; Caroline Rowland; Elena Tribushinina; Evan Kidd

This symposium focuses on studies comparing the acquisition of morphosyntax across unrelated Slavic, Finnic and Germanic languages, using a matched design. The studies discuss method, results and challenges arising in the cross-linguistic design.

Overgeneralisation and overabundance in the production of 5-year-olds: a crosslinguistic study

Authors: Gordana Hrzica; Mari Aigro, Sara Košutar, Tomislava Bošnjak Botica, Virve Vihman

"Children are known to produce variable forms for a single target. Some of these derive from the overgeneralization of patterns in the input ('goed' pro 'went'). It has been proposed that children eventually retreat from overgeneralization errors via entrenchment and a probabilistic process of construction competition (Ambridge et al. 2015). A related issue is that the target language itself may contain parallel forms. Overabundance refers to a situation where more than one lexical form is available in a morphological paradigm cell, e.g. 'puddle' in Croatian (lokva-nom.sg, lokava ~ lokva ~ lokvi-genitive.plural) and Estonian (loik-nom.sg, loikusid ~ loike-partitive.plural). The acquisition of overabundance in a language appears to be in conflict with the simultaneous process of retreat from overgeneralisation.

This talk investigates how children acquiring Croatian or Estonian navigate nouns exhibiting overabundance in the target languages, and whether overgeneralisation follows the same patterns as overabundant nouns. We tested 139 four- to six-year-olds on noun forms with an elicited production task. The same design was used in both languages, using both overabundant noun stimuli, with at least two forms (genitive plural in Croatian, partitive plural in Estonian), and those with only one form.

The results showed significant main effects of age (improved accuracy with age in Estonian), differences between item types (lower accuracy for overabundant nouns) and language (lower overall accuracy in Croatian). Croatian children produced overgeneralised forms of overabundant nouns, using the most frequent genitive plural ending. Errors made by Estonian children were less consistent. Thus, effects of the linguistic system and properties of the input were found. We discuss overgeneralisation errors across age groups, and what overgeneralisation in the presence of overabundance in the target system reveals about entrenchment and form competition in cross-linguistic acquisition. We also discuss methodological challenges of cross-linguistic experimental paradigms and theoretical implications."

Crosslinguistic influence in bilingual acquisition: the production of Estonian unreal conditionals

Authors: Adele Vaks; Virve Vihman

"Cross-linguistic influence (CLI) is one of the many factors contributing to the heterogeneity of bilingual experience. The direction and form of CLI depend on several factors like language dominance and typological differences. In a study with Estonian-Norwegian (NOR, N=24) and Russian-Estonian (RUS, N=20) bilinguals aged 5;0 to 7;10, we compared the results of a Sentence Repetition Task (SRT), focusing on structures that might reveal different effects of CLI from their respective languages. Estonian is spoken as heritage language by NOR and as majority language by RUS. However, we did not find differences in the two groups' overall SRT and vocabulary scores.

In this talk, we focus on unreal conditionals. The structure proved most challenging for both groups, with mean accuracy scores at 43% for NOR and 38% for RUS. The conditional mood is distinctively morphologically marked in Estonian, while both Norwegian and Russian employ past tense forms, combined with a subjunctive particle (Russian) or modal verbs (Norwegian). Both groups frequently omitted the conditional suffix (36% of targeted verbs in NOR, 52% in RUS) and often substituted it with the past indicative (14% of targeted verbs in NOR, 26% in RUS). We discuss possible sources of variation in accuracy rates, considering the different language situations of the two groups. We also take a closer look at the strategies used by children, demonstrating that cross-linguistic transfer can be a resourceful way to deal with a complex structure when the child understands the semantic content, but lacks the grammatical resources to express it in a target-like manner. To better tease out what stems from CLI, we compare the bilinguals' responses to each other and to those of their monolingual Estonian peers."

The relationship between lexicon, morphology and syntax in English and Estonian

Authors: Caroline Rowland; Seamus Donnelly, Adele Vaks, Ada Urm, Piia Taremaa, Izabela Jordanoska, Tiia Tulviste, Virve Vihman

A long-standing question in language development is the nature of the relationship between early lexical and grammatical knowledge. The very strong correlation between the two has led some to argue that lexical and syntactic knowledge may be inseparable, consistent with usage-based theories that eschew a distinction between the two systems. However, little research has explicitly examined whether early lexical and syntactic knowledge are statistically separable and, if so, whether morphology patterns with the lexicon or syntax. Moreover, there are two underappreciated methodological challenges in such research. First, the relationship between the lexical, morphological and grammatical knowledge may change during development. Second, non-linear mappings between true and observed scores on the language measurement scales we use could lead to spurious multidimensionality. Here we overcome these challenges by using data from several time points and a statistical method robust to such non-linear mappings. In Study 1, we examined item-level vocabulary and syntax data on American English from the Wordbank database (data collected using Communicative Development Inventories, CDIs). In Study 2, we used two longitudinal corpora of American and British English, which used the same CDI scale at 18/19, 21, 24 and 30 months. In both studies, we found clear evidence that while there is clearly a very strong relationship between vocabulary and syntax knowledge in early language development, the two are clearly separable from about 18 months. In Study 3, we are extending the analysis to morphology, using data from Estonian, a language with a much more extensive and complex morphological system than English. The goal is to determine (a) whether the same patterns hold for morphology when we compare cross-linguistic data, and (b) whether morphology aligns with lexical or syntactic development. The project has implications for our understanding of the mechanisms underlying lexical, morphological and syntactic acquisition, which will be discussed.

The acquisition of pronominal gender in the two languages of Russian-Dutch bilinguals

Authors: Elena Tribushinina; Pim Mak

"The acquisition of grammatical gender has been extensively studied across languages and populations. Much less is known about how children acquire pronominal gender. This talk reports a study testing production of pronoun gender in the narratives of Russian-Dutch bilinguals in comparison to Russian and Dutch monolinguals. This language combination is theoretically interesting because Russian has a rich and transparent gender system, whereas the Dutch gender system is morphologically sparse and opaque. In addition, Russian pronominalizes based on grammatical gender, whereas pronoun gender in Dutch is largely determined by semantic principles. Hence, we expect both positive and negative transfer in children simultaneously acquiring Dutch and Russian.

The participants were 93 simultaneous Russian-Dutch bilinguals growing up in the Netherlands, 97 Dutch-speaking monolinguals and 93 Russian-speaking monolinguals (age range 4;1-7;11). In addition, we included 83 age-matched Russian monolinguals with DLD to compare the effects of reduced exposure in bilingualism with the effects of reduced intake in DLD. Narratives were elicited using two sets of pictures: the Fox Story and the Cat Story. The bilinguals produced one narrative in each language; the monolinguals were randomly assigned to one of the narratives. Each pronoun was coded as either correct or incorrect based on the gender of its antecedent. Data were analysed with a logistic regression.

The results reveal cross-linguistic differences in the acquisition pace. Russian monolinguals with and without DLD performed at ceiling from age 4 onwards, whereas Dutch-speaking monolinguals still made errors at age 7. Russian-Dutch bilinguals acquired Russian pronoun gender more slowly, and reached the monolingual level only by age 7. In Dutch, the bilingual children outperformed their monolingual peers from age 5 onwards, which suggests positive transfer from Russian. However, we also found transfer errors, where bilinguals used a pronoun compatible with the gender of the antecedent in Russian."

Symposium: Dynamic Systems in Early Language Development: A Multifaceted Exploration

Speakers: Elitzur Dattner; Dorit Ravid; Paul Ibbotson; Mira Calin Gatenyo; Ayhan Akcu Koc

The transition into syntax: dynamic relations in syntactic development using network analysis. Corpus studies of Hebrew and English child-caregiver dyads, focusing on the emergence of definite marking, formulaticity, and syntactic constructions.

The transition into syntax: Early syntax in a dynamic perspective

Authors: Elitzur Dattner; Dorit Ravid

In the pivotal transition between ages two and three, children undergo a remarkable linguistic transformation, moving from isolated words to complex syntax. This talk introduces a comprehensive framework that aims to capture this intricate process, focusing on the role of syntactic cognitive representation within a dynamic-systems oriented Usage-Based, Construction Grammar approach. At the core of this framework is the idea that syntactic cognitive representation involves an implicit understanding of which linguistic units are likely to follow others given a particular pragmatic/discursive/communicative needs. This understanding shapes the linear array of words that best convey specific semantic relations in diverse communicative contexts. Connection weights between these units are dynamic, changing in relation to their frequency of co-occurrence and the contextual, communicative information they carry. To illustrate this, the framework employs a network-based model where words act as nodes and word combinations serve as links. This network-based representation allows for the dynamic, non-linear nature of language development to be statistically captured and analyzed. Child Directed Speech (CDS) is posited as a crucial filter in this framework, highlighting the most frequent and meaningful lexical and grammatical contrasts. The talk will elaborate on how this framework can be applied to longitudinal speech data, offering insights into the evolving relationship between lexical and grammatical components over time. By introducing this framework, the talk aims to provide a nuanced understanding of the dynamic systems that underlie the complex process of syntactic development and CS-CDS relations. It emphasizes the role of cognitive representation in this evolution, offering a new lens through which to view and study the journey of early language acquisition.

Emergence of Hebrew definite marking in early mother-toddler interaction

Authors: Dorit Ravid; Naama Feldman, Orit Ashkenazi and Elitzur Dattner

"Definiteness (involving semantic-pragmatic notions such as uniqueness and familiarity) is a fundamental property expressed in many languages either lexically of morphologically, referring to a clearly identifiable entity in a given context. According to the developmental literature, children start producing a small number of definite articles with a restricted set of nouns towards their second birthday, while six months later definiteness is already used in most obligatory contexts. This rapid acquisition process requires young children to experience and learn the contexts of definite marking, with special focus on common ground, deixis and anaphoricity, as these pragmatic cues highlight the language-specific structures associated with the definite article in the ambient language.

The current study investigates the emergence of Hebrew definite marking by a toddler aged 1;9-2;2 and definite article usages in the CDS, in a 20,028-utterance corpus of mother-child interaction across six months of development. Structural coding involved identifying and classifying all occurrences of the definite prefix ha-, including morpho-phonological variations, on nouns in a range of syntactic roles and on adjectives in agreement with nouns. Functional / pragmatic coding examined the ways in which common ground (CG) was presented to the child (and used by her), including deictic, lexical, syntactic and discourse cues and strategies. Results indicated a clear association of child's age with frequency and diversity of definite marking, with definite usage categories (both structural and pragmatic) becoming increasingly related to parental input with child's age, as well as correlated with each other. The child started marking definiteness productively on nouns around age 2 years, with definite overmarking as the most common error. CG contexts and anaphors were most frequent in both CS and CDS, however earlier CS had many usages of deixis. This study demonstrates how parental input guides the acquisition of a complex pragmatic category in mother-child interaction."

Emerging Formulaticity in Dynamic Networks of Speech: English and Hebrew comparisons.

Authors: Paul Ibbotson; Orit Ashkenazi and Elitzur Dattner

In the realm of language development, understanding the emergence and evolution of formulaic language structures is crucial. This study introduces a novel measure to quantify formulaiticity in dynamic networks of naturalistic child speech and child directed speech. The Clustering coefficient captures how interconnected the language network is, specifically the ratio of connected triangles to triplets in a directed network. Each time a new node (word) is added to the network, the clustering coefficient is recalculated, providing a measure of formulaticity that is sensitive to cumulative linguistic experience. The results are then rescaled to fall between -1 and +1, offering a nuanced view of how formulaic structures evolve over time. Using this framework, we analyze language corpora from two Hebrew-speaking and two English-speaking child-caregiver dyads, as well as an adult Hebrew dataset from the Israeli Parliament. Our findings reveal that the actual clustering coefficient navigates between the theoretical maximum and minimum formulaic values. As children's multi-word uses accumulate, the network becomes increasingly complex, and interconnected, and the formulaticity, as measured by the clustering coefficient, drops. This dynamic measure allows us to compare formulaticity across developmental stages and between languages with very different morphosyntax, contributing to a more comprehensive understanding of language acquisition and use. This study highlights the importance of dynamic, context-sensitive measures in capturing the complexities of language development and cross-linguistic analysis.

Emerging syntax as a dynamically developing network: CS-CDS relations in early Hebrew

Authors: Mira Calin Gatenyo; Elitzur Dattner, Orit Ashkenazi and Dorit Ravid

Toddlers globally undergo a captivating linguistic journey, transitioning from single words to creative expressions. Usage-based syntactic theories propose that, in the course of meaningful interactions, toddlers grasp concrete structures through imitation and gradually form abstract syntax. In this study, we propose to conceptualize the cognitive knowledge of "syntax" as a dynamic network of links between words. We present a case study to explain syntactic development through dynamic systems analysis tools, characterizing the syntactic network evolution between a toddler and their mother from early word combination emergence to basic sentence formation (ages 1;8-2;2 years). 49 recordings from the Ashkenazi corpus, comprising natural parent-child interactions, were transcribed and encoded, culminating in 184,961 words based on syntactic categories and morphology. Toddler and mother transcriptions were separated, and each recording yielded an independent 'syntactic network' where each node represented a lexical/syntactic category (e.g., Determiner, Preposition, Noun.Fm, Verb.3sg.Fm.Past) and each link a connection between them. Measures of dynamic networks were analyzed (node count, network size, mean network distances, node eigenvector centrality, link betweenness centrality, importance hubs and network density) alongside the mutual influence of network measures between the toddler and their caregiver. Results indicated the expansion of the toddler's network and an increase in the variety of syntactic categories and specific connections, leading to consistent production of syntactically-linked simple sentences. The caregiver's utterances show stable syntactic richness relative to their toddler's. Mutual alignment was found in terms of node centrality and link betweenness measures and alignment in the density of the Child-Directed Speech network relative to the Child Speech network as a function of the child's age. These findings strengthen the notion of a dynamic syntactic network development within a communicative context.

Symposium: Theory of Mind, Language and Cognition in children with Developmental Disorders

Speakers: Theo Marinis; Dafni V. Bagioka; Stephanie Durrleman; Eleni Peristeri; Franziska Baumeister; Mikhail Kissine

This symposium brings together studies addressing the relationship between ToM, language, and cognition in monolingual and bilingual children with DLD and ASD as well as studies using non-verbal and low-verbal ToM tasks.

Testing first- and second-order Theory of Mind through novel verbal and non-verbal False Belief task

Authors: Dafni V. Bagioka; Maria Andreou, Anna Czypionka, Angelika Golegos, Theodoros Marinis, Eleni Peristeri, Arhonto Terzi

"ToM-abilities are often assessed using False-Belief (FB) tasks that test first-order ToM (monitoring another person's beliefs) and second-order ToM (monitoring person-A's beliefs about person-B's beliefs). Although language is a powerful predictor of ToM, most widely used ToM tasks involve complex language. Therefore, low scores in ToM tasks, especially in low-verbal autistic children and children with Developmental Language Disorder (DLD), could result from low language skills that make it difficult to understand and/ or solve ToM tasks. To date there is a scarcity of non-verbal first-order FB tasks and a lack of non-verbal second-order FB tasks.

To assess ToM independently from language we developed a toolkit that comprises first- and second-order FB tasks. The toolkit is available in verbal (Greek, German) and non-verbal versions and consists of video clips. We present data from six neurotypical (NT) groups and one group of children with DLD:

(1) NT Adults (n(Greek)=50, n(German)=50): better performance in first-order-FB than second-order-FB, better in verbal than non-verbal tasks.

(2) NT children, 1-2-graders (n(Greek)=50, n(German)=22): Ongoing data collection to reach 50 per group; better performance in true-belief (TB) than FB; better in non-verbal than verbal tasks.

(3) NT-children, 3-4-graders (n(Greek)=30, n(German)=22): Ongoing data collection to reach 50 per group; better performance in TB than FB; similar in non-verbal and verbal tasks.

(4) Children with DLD, 3-4-graders (n(Greek): Ongoing data collection to reach 30 children.

Neurotypical adults seem to use language to mediate ToM performance. NT 1-2-graders do not benefit from language in ToM performance, suggesting that language supports adults but adds processing cost for young schoolchildren during FB-tasks. Data from NT 3-4-graders show development of ToM-abilities throughout primary-school. We predict that children with DLD will perform similarly to age-matched controls in non-verbal FB tasks but will show deficits in verbal FB-tasks and will perform similarly to NT 1-2 graders."

Bilingualism effects in children with Developmental Language Disorder (DLD)

Authors: Stephanie Durrleman; Clémence Gordon-Dana, Anamaria Bentea

"A subgroup of children diagnosed with DLD exhibits difficulties in their ToM. Maintaining a balanced level of proficiency in two languages has been proposed to possibly confer certain cognitive advantages, although this hypothesis remains unexplored for ToM, which according to preliminary work might be enhanced at the simpler, first-order level, in DLD (Peristeri et al 2019).

This study sought to answer, for the first time, the following two research questions: (1) Can higher scores be observed in bilingual children with DLD compared to their monolingual peers for both first-order and second-order ToM? (2) Can a more balanced level of bilingualism maximize ToM benefits? We administered ToM tests inspired by Durrleman et al. (2022) designed to minimize the influence of language, thus ensuring a clear assessment of ToM, to two groups of 14 children with DLD, aged 5 to 10 years, matched for age (average age = 7) and language abilities on standardized tasks. We assessed their bilingual experiences by means of the PaBiQ parental questionnaire. Our analysis revealed that bilingual children with DLD performed significantly better in understanding first-order false beliefs compared to their monolingual peers, but no differences were observed in second-order ToM tasks. Moreover, having a more balanced exposure to the two languages did not correlate with improved ToM.

The higher performance of bilingual children on first-order ToM tasks compared to their monolingual peers suggests a potential socio-cognitive advantage of bilingualism in the context of DLD. While previous studies have reported associations between balanced bilingualism in typically developing children, this relationship does not emerge for ToM in our study of children with DLD. These findings suggest that bilingual experiences can have positive effects on at least one aspect of ToM development in children with DLD."

Bilingualism & Theory of Mind (ToM) development in autistic children over time

Authors: Eleni Peristeri; Margreet Vogelzang, Ianthi Tsimpli, Stephanie Durrleman

"Autistic children often display ToM difficulties, which can be alleviated by better vocabulary, executive functions (EF), IQ and the linguistic experience of bilingualism. Research on bilingualism effects on ToM has focused on cross-sectional comparisons of first-order ToM. This is the first longitudinal study focused on second-order ToM in monolingual and bilingual autistic children and aims to shed light on the roles played by linguistic and cognitive factors on ToM trajectories.

The study included 21 autistic bilingual children (ASDbi), and 21 age-, socioeconomic status-, and verbal IQ-matched autistic monolingual children (ASDmono). Both cohorts were followed for three timepoints, specifically at ages 6, 9 and 12. Measures of second-order ToM, expressive vocabulary, EF, and Performance IQ (PIQ) were taken.

Both groups' ToM performance improved significantly with age. ASDmono children outperformed ASDbi in expressive vocabulary at all timepoints, but ASDbi had higher EF and PIQ (except for PIQ at timepoint 1, which did not reach significance. ASDbi children scored higher on second-order ToM at timepoints 2 and 3 and this was associated with PIQ and expressive vocabulary scores.

The results reveal positive relationships between vocabulary and PIQ, and trajectories of second-order ToM in ASDbi children, most noticeably at 9 and 12 years. ASDbi children showed higher EF across all three timepoints, however, this did not seem to boost their ToM. In contrast, vocabulary, which was lower in ASDbi children, and PIQ, which was higher for this group at timepoints 2 and 3, positively impacted ToM, suggesting that bilingual children capitalize on cognitive (PIQ) and linguistic (vocabulary) resources effectively to yield beneficial cascading effects on ToM development."

Impact of cumulative linguistic exposure on Theory of Mind in children with and without autism

Authors: Franziska Baumeister; Pauline Wolfer, Stephanie Durrleman

"Bilingualism reportedly confers advantages in ToM in neurotypical (NT) children, and in one preliminary study involving autistic children (Peristeri et al. 2021). However, the "False-Belief" tasks used in these studies often involve confounding verbal abilities; moreover, the binary nature of the tasks' response choices increases the likelihood of chance performance. Finally, studies comparing monolinguals and bilinguals typically hypothesize rather than operationalize the underlying mechanisms explaining the potential impact of the bilingual experience on ToM: bilinguals would show a "privileged language-knowledge-person connection" thanks to an increased exposure to people speaking different languages, which should consequently lead to more frequent reasoning about interlocutors' languages, and by extension, their mental states.

In this study, we administer a new low-verbal ToM task providing 3 possible response choices, thus steering away from chance-level, and we incorporate justification questions to yield additional insight into ToM reasoning. We furthermore quantify language experience through a "cumulative language exposure entropy score" based on the Q-BEx questionnaire. These tools allow us to address the questions (1) Does higher cumulative language exposure positively impact ToM in both NT and ASD children? (2) How do NT and ASD children justify their perspectives?

Preliminary analysis involving 114 TD children (3;3-11;7) and 31 ASD children (3;10-11;7) using ordinal regression analyses suggests that for both NT and ASD groups only age (for both groups) and IQ (only for NT children) are identified as significant predictors but not language exposure. To provide a more robust assessment of these findings for question (1) and to address question (2), an additional 40 NT and 70 ASD children will be tested by June 2024 and included in the dataset. Bayesian analyses will be used with this larger dataset to provide a deeper understanding of the observed results and to address the research questions in a robust way."

IASCL 2024 Symposia: Wednesday Afternoon

07/17/2024, from 02:15 PM to 04:15 PM , Room P200

Symposium: Let's talk about feelings: Multilinguals' Language-related Emotions and Well-Being

Speakers: Graziela Dekeyser; Nathalie Topaj; Jessica Willard; Meagan Driver; Annick De Houwer

How do multilingual children, adolescents, and their teachers feel about speaking, learning and teaching their languages? This symposium gives their feelings a platform by drawing on rich qualitative and large-scale quantitative data.

"I am scared Miss." Multilingual Children's Emotional Experiences Associated with Languages

Authors: Graziela Dekeyser;

"Topic: In Flanders, the Dutch-speaking region of Belgium, an increasing number of children grow up multilingual. Prior research has shown how language learning is a highly emotional process. For example, a significant amount of studies investigated how foreign language learning can be associated with feelings of anxiety as well as enjoyment (Dewaele & Li, 2020). However, several gaps in the literature remain. Relatively few studies focused on the emotions experienced in everyday situations beyond the context of the formal foreign language class. Next, most research has been restricted to late(r) learners of a L2 (either late adolescents or (young) adults), while early child multilinguals have received less attention. Especially for the latter group, more research on this topic is important as emotions surrounding a language may have a crucial impact on the further development of that language (Sevinç and Backus 2017). Moreover, in Flanders, multilingualism is generally problematized due to the region's strong Dutch monolingual ideology (Pulinx et al., 2017). Consequently, emotions associated with the heritage language as well as the majority language may be heightened among Flemish multilingual children. However, to our knowledge, no prior studies on this topic among this research group exist.

Research questions: RQ1: Which emotions do multilingual children associate with their heritage language and Dutch? RQ2: What are the sources of these reported emotions according to the children?

Method: 10 single-sex focus groups were conducted with multilingual children living in the city of Antwerp, Belgium. In total, 50 children were included. Thematic analysis was performed.

Results: The results show how growing up multilingual in Flanders is a very ambivalent emotional experience. Children reported a wide variety of positive ànd negative emotions associated with both languages. Interpretation of the results points to the importance of identity motives in producing emotional experiences related to languages."

Well-being and Language Skills in Heritage Language Classes

Authors: Nathalie Topaj; Natalia Gagarina

"Berlin is a multilingual and multicultural city. Community interest, changes in policies, and the newly established legal framework, giving school students an opportunity to attend heritage language (HL) classes, are contributing to the visibility of multilingualism and the expansion of HL instruction in schools, provided by the Senate of Berlin. The offer for Turkish and Arabic, which are among the most spoken heritage languages in Berlin, has been considerably increased in the last years. More than 2200 Turkish- and over 1400 Arabic-speaking children are enrolled in HL classes.

Within the framework of the evaluation of HL instruction at Berlin primary schools (Evaluation ESU), over 200 Turkish-German and Arabic-German-speaking children were tested in both languages at the end of grade 3 and 4. The test battery included tests on reading, writing, and narrative skills, and a questionnaire on children's language environment, attitudes towards languages, self-evaluation of language skills, experience with HL classes etc. Among other factors, children's well-being might play a considerable role in the overall success in learning family languages at school.

For the symposium, we will explore questions on children's well-being (Do you feel comfortable in first language classes and enjoy going there? Do you enjoy learning Turkish/Arabic at school?) in relation to attitudes towards their languages (Which language do you prefer to speak?), self-evaluation (Which language do

you speak best? How well can you understand/speak/read/write German and Turkish/Arabic?), improvement (Have you improved in understanding/speaking/ reading/writing in Turkish/Arabic through first language classes?), and to language skills based on the performed tests. The data is currently being processed. While many children feel comfortable and enjoy learning their family language in HL classes, others give different answers to these questions. The attitude, language preferences, self-evaluation and improvement also differ within subgroups. The results will be presented at the conference."

Linking Multilingual Adolescents' Language-related Emotions to Individual and Contextual Correlates

Authors: Jessica Willard; Beyhan Ertanir, Mualla Kaya, Linda Kololli, Larissa Trösch

First findings from North America and the Netherlands have demonstrated that being multilingual and speaking not only the majority but also a heritage language can be a source of positive and negative emotions. Individual and contextual factors may play a role in determining the valence of emotions (Driver, 2020; Jean & Geva, 2012; Sevinç & Dewaele). For a large sample of multilingual adolescents in Germany, we examined: (1) whether positive and negative emotions with regard to using a heritage and majority language are reported, and (2) how individual (e.g., generational status, self-perceived language proficiency, ethnic and national identity), peer group (e.g., language use), family and school factors relate to positive and negative emotions. N= 818 multilingual adolescents in Germany with numerous different heritage languages participated in this cross-sectional online survey. Positive and negative emotions in relation to using the heritage and majority language were assessed with 28 adapted self-report items (Driver, 2020). Descriptively, adolescents reported experiencing both positive and negative emotions with regard to the heritage and majority language. A set of multiple regressions revealed that many individual-level, family, and school factors were connected to positive and negative emotions: for example, stronger self-rated proficiency in a language was related to more positive and fewer negative emotions in that language. Stronger ethnic and national identity commitment were mostly related to more positive and fewer negative emotions. Finally, teachers' negative and positive attitudes towards adolescents' heritage languages were connected to positive and negative emotions for both the heritage and majority language. These findings suggest no single factor such as self-perceived language proficiency is the sole determinant of feeling good or bad about using a language. Instead, intricate processes involving individual factors and several levels of contextual factors appear to be involved in emotions related to using a heritage and majority language.

From Linguistic Insecurity to Pride: The Emotional Rollercoaster of the Heritage Language Teacher

Authors: Meagan Driver;

"As the number of heritage speakers (HSs) in the U.S. continues to rise, scholars across a range of disciplines have set out to explore HS needs both in and outside the classroom setting. Encouragingly, increased interest on affective variables and wellbeing initiatives in second language acquisition (SLA) have also motivated many scholars to highlight the need to empower heritage language learners and stakeholders (e.g., Ortega, 2020) and explore emotional aspects within the heritage language (HL) classroom. Specifically, linguistic insecurity has appeared as an emotion particularly relevant to the HL context (e.g., Driver, 2023; Tseng, 2021). Still, few studies explore the experiences of HL educators who also identify as members of a HS community (e.g., Cho, 2014), which leaves an essential perspective and valuable expertise absent from HL education discussions. This study aims to explore the emotional experiences of HL educators from HL backgrounds in order to uncover not only challenges but also coping mechanisms in an effort to create spaces that support HSs along the HL teacher pipeline.

Qualitative data for this study include survey and interview responses from five middle (N = 2) and high school (N = 3) HL teachers in the U.S. from three different HL backgrounds (Arabic, Chinese, Spanish). Findings shed light on the emotional benefits, challenges, and barriers associated with entering the HL teacher pipeline for those from language minoritized backgrounds. Specifically, results highlight mixed feelings of linguistic insecurity, shame, and frustration, but also pride and confidence for HL educators in the HL classroom. Findings also suggest a relationship between common language ideologies (e.g., native speaker ideology) and manifestations of linguistic insecurity for educators from HL communities. Pedagogical implications for language teacher training programs and HL classrooms are provided, as well as suggestions for future research and professional initiatives that may foster HL teacher wellbeing."

Symposium: Extending the clinical value of tense omissions into complex syntax and grammaticality judgments

Speakers: Sean Redmond; Melanie Schuele; Mabel Rice; Alyson Abel

Converging evidence for persistent tense-marking deficits among English-speaking children with language impairment is presented across four research projects. Effects of clausal contexts, co-occurring conditions, predictors of growth are discussed

Tense marking in complex syntax by children with specific language impairment

Authors: Melanie Schuele;

Tense/finiteness marking has been studied most often in the production of simple clauses. Interventions to increase accuracy on tense marking appear to have targeted primarily, if not exclusively, simple clauses. To meet academic and social language demands, children must produce a variety of dependent clauses in spoken and written language. Tense marking in dependent clauses (e.g., spoken as mono-clausal utterances) and multi-clauses utterances (i.e., dependent + main clauses) may present greater challenges to children. Language samples from English-speaking children with specific language impairment (SLI) between 5 and 7 years of age (n = 25) and MLU-matched typical language (TL) learners (n = 20) were analyzed for obligatory tense marking. TL children demonstrated no differences in tense-marking when comparing simple clauses, dependent clauses, and main clauses in complex syntax utterances across three structures: regular past tense (jump/ed), 3s (jump/3s), and auxiliary/copula BE. However, SLI children demonstrated greater difficulty marking obligatory tense in regular past tense (jump/ed) and 3s (jump/3s) but not auxiliary/copula BE. Ongoing analyses are exploring whether tense marking is particularly vulnerable for children with SLI by complex syntax type (e.g., relative clauses, sentential complements) or a general vulnerability in complex syntax is apparent. The details of finite marking deficits are critical to understand in order to design the most efficacious language interventions.

English-speaking SLI children's persistent acceptance of tense errors in complex sentence: 5-18 yrs

Authors: Mabel Rice; Kathleen Kelsey Earnest

Language impairments can be difficult to detect in otherwise typically developing healthy children, a condition known as Specific Language Impairment (SLI), sometimes referred to as the broader category, Developmental Language Disorders. The difficulties in identification persist as the children's language impairments lag those of age peers throughout childhood. Identification methods for young children focus on the acquisition of simple sentences and vocabulary growth, methods that can lack sensitivity for later grammar skills. Previous studies identified a valid clinical grammar marker featuring tense/finiteness marking in simple clauses, although limited by ceiling effects around the age of 8 years. The focus of this presentation is a study of a new, more grammatically challenging complex sentence task in children affected or unaffected with SLI in longitudinal data encompassing the ages 5-18 years. There were 483 monolingual English-speaking children (213 unaffected, 270 SLI affected), tested annually over ages 5-18 years. The new experimental task was a grammaticality judgment (GJ) task designed to be interpretable as an extension of the simple clause formats of tasks designed for young children. The task evaluated detection of errors of tense/finiteness in a multi-clause complex of this format: When did Mary say she paint(ed) a door? The outcomes were consistent with the outcomes of earlier studies of younger children with a simple sentence, such as she paint(ed) a door. As in these studies, growth models for the SLI group were consistently lower than the unaffected group, although the growth trajectories across groups did not differ. The types of error were similar across groups, i.e., acceptance of omissions and better identification of non-allowed insertion of tense/finiteness markers. Covariates of child nonverbal IQ, mother's education, and child sex did not significantly moderate these effects.

Grammaticality judgments of tense omissions by children with and without ADHD

Authors: Sean Redmond;

Academic underachievement, disrupted peer relations, and difficulties following directions could be the result of underlying attention deficits, language impairments, or both. Robust psycholinguistic protocols are needed to sift through the relative contributors to these generic clinical signs and develop appropriate treatment plans to address them. In this presentation, the extent to which grammaticality judgments (GJ) could be used to asses the linguistic abilities of children with attention-deficit/hyperactivity disorder (ADHD) is evaluated. ADHD provides an interesting stress test for GJ tasks. GJ tasks have been characterized by some as drawing heavily upon children's metalinguistic skills requiring sustained attention, concentration, and working memory. For

these reasons, we would expect GJ tasks to be challenging for children with ADHD and prone to generate underestimations of their linguistic abilities. Others have characterized GJs as largely reflexive decisions drawing primarily upon children's underlying syntactic representations. To the extent this is true, GJ task performances should track with the linguistic abilities of children with ADHD in the same way it does for unaffected children. A 4-group design (n=78) consisting of students with neurotypical development (TD), attention-deficit/ hyperactivity disorder (ADHD), specific language impairment (SLI), and comorbid ADHD and language impairment (ADHD+LI) was used to test these contrasting predictions with judgments involving finite errors in simple declarative and interrogative sentences. Groups were matched for age, gender, race/ethnicity, and maternal education levels. All participants (age range: 6-8 years) were monolingual speakers of General American English and had nonverbal IQ scores > 80. ANOVAs revealed the following significant pairwise comparisons: TD = ADHD > SLI = ADHD+LI. Correlations between children's ADHD symptoms and their GJ performances were weak and nonsignificant (rs < -.15). These outcomes align best with the contention that GJs tap into children's linguistic representations regardless of their ADHD status.

Judgments of tense marking as an English proficiency measure in mono/bilingual preadolescents

Authors: Alyson Abel;

With heightened public awareness of developmental language disorders (DLD), including specific language impairment (SLI), comes increased efforts to identify clinical markers of the disorder. Two widely-accepted clinical markers of SLI are deficits in tense marking and phonological working memory. Tasks assessing grammaticality judgment (GJ) of tense marking accuracy in two simple question forms, wh- and yes/no questions, capture the persistent tense marking deficits in monolingual children with SLI through age 15 and correlate with figurative language abilities in 16-year-olds. Measures of phonological working memory, particularly nonword repetition (NWR) tasks, are sensitive to SLI in both monolingual and bilingual children through at least age 9. Older children with SLI often go misdiagnosed or unnoticed, especially if they're bilingual, due to the lack of other deficits and relatively low demands on language through the middle-school years. Accurate clinical markers for pre-adolescent children from variable language backgrounds are needed to improve identification. Here, 9-12 year old children (n=33, 18 monolingual, 15 bilingual) completed an English language omnibus assessment (CELF), NWR task, GJ wh-question task (GJWH), and GJ yes/no question task (GJYN). Participants were identified as bilingual if they received Spanish input at or before age 5. Spoken Spanish proficiency was variable across the bilingual group. Participants were not clinically selected; CELF scores ranged from 56-132 (M=102.5). Groups did not differ on any measure. CELF scores correlated with all other measures for the bilingual group but only correlated with NWR and GJWH performance for the monolingual group. A series of linear regression analyses further identified that NWR did not predict CELF score for either group. GJWH predicted CELF score for both groups and GJYN predicted CELF score for the bilingual group only. These outcomes support GJ measures of tense marking as being sensitive to language ability in pre-adolescent monolingual and bilingual children.

Symposium: Linking child speech perception and production

Speakers: Fleur Vissers; Iris Berent; Tamar Keren-Portnoy; Irene Lorenzini; Henny Yeung; Natasja Delbar

Researching the link between children's speech perception and production can be challenging. In five talks, a variety of methods are presented showing different ways to study this link in children of different ages – from newborn to the age of six.

Phonology isn't' about talking!

Authors: Iris Berent;

The links between phonology and the articulatory motor system are controversial. One view asserts that phonology is governed by abstract principles (Halle & Reiss, 2008); another states that phonological intuitions in perception arise from tacit motor simulation, i.e., talking (Hayes et al., 2004). The "talking" position is supported by a large literature, showing that motor simulation guides phonetic categorization (e.g., ba/da?) (Berent et al., 2020; Bruderer et al., 2015; D'Ausilo et al., 2009; Möttonen et al., 2009; Murakami et al., 2018; Smalle et al., 2014). Moreover, many phonological principles are articulatorily "sensible"; for example, syllables like bla are easier to articulate than lba (Mattingly, 1981). Of interest, then, is whether phonological intuitions in perception (e.g., bla>lba) arise directly from motor pressures that occur in production. Here, I address this question by evidence from the sonority hierarchy (e.g., bla>bna>bda>lba). I first show that young children are sensitive to the sonority hierarchy (Berent et al., 2011). I next evaluate the likely origins of these intuitions. Building on transcranial magnetic stimulation work from adults, I show that sensitivity to the sonority hierarchy does not require motor simulation, as it emerges even when the brain motor system is disrupted by transcranial magnetic simulation (Berent et al., 2015; Berent et al., 2023), or mechanically (Berent & Platt, 2022; Zhao & Berent, 2018). Furthermore, newborns show sensitivity to the hierarchy well before they can talk (Gómez et al., 2014). The dissociation of phonological constraints operating in perception from the articulatory motor system is particularly striking, given that motor simulation demonstrably constrains phonetic perception. As such, these results suggest that phonological intuitions are distinct from the phonetic pressures, and they are irreducible to the constraints on talking.

The contribution of production practice to perception, memory and lexical development

Authors: Tamar Keren-Portnoy; Rory DePaolis (James Madison University), Helena Daffern (University of York), & Mona Kanaan (University of York)

Research on the connections between perception and production in infants' language development tends to focus on the ways in which infant's perception of the input language affects their production. This study focuses on the reverse relationship, asking how infants' own productions, and in particular babble or prelinguistic consonant production, affect the ways in which they listen, remember and learn language. For example, infants ability to move their articulators affects their ability to distinguish between different sounds (Choi et al., 2019); that sounds familiar to infants from their own production capture their attention more than other sounds (DePaolis et al., 2011); that novel words which contain sound that are within a toddler's repertoire are easier to repeat in a nonword repetition task (Keren-Portnoy et al., 2010) and that early mastery of sound production through babble predicts age at production of first words (McCune & Vihman, 2001; McGillion et al., 2017). I will then report on an ongoing experiment with infants from low-mid socioeconomic status (n=96), in which one group of infants aged 0;7 received an app that we developed (Daffern, 2020; Keren-Portnoy et al., 2021), to encourage them to vocalise and babble more, while another group received an app that encourages reaching for a moving shape. We measured the infants' vocabulary size using the UK-CDI (Alcock et al., 2020) monthly until age 1;0 and then again at age 1;6. This study was pre-registered, and we can therefore not report on its results midway. The final data will be collected in November 2023. We will be able to report on the study's results by July 2024.

More on the action-perception link in language development: speech-related sensorimotor development

Authors: Irene Lorenzini; Henny Yeung (Simon Fraser University), & Thierry Nazzi (Université Paris Cité)

Speakers of a large variety of languages tend to rely more on consonants than on vowels for lexical processing (Cutler & Nazzi, 2019). In French, this 'Consonant-bias (C-bias)' appears between 6 and 8 months, preceded by a 'Vowel-bias (V-bias)' (Nishibayashi & Nazzi, 2016). Linguistic experience might explain this switch: contrary to consonants, vowels are perceivable even prenatally, and young infants might first focus on such familiar sounds and later switch to consonants. However, auditory experience might not be the only factor at play.

Indeed, the onset of consonant production is synchronous with the switch to the C-bias. On these bases, we asked whether a perception-production link could be identified in this domain. Using the Headturn Preference Paradigm, 32 French-learning 7-month-olds (when the switch to the C-bias is observed; M=7m; 14d) completed a word segmentation task in which they were tested on C- and V-mispronunciations of the segmented words, to determine the presence of V-/C-biases (extending Nishibayashi & Nazzi, 2016). In parallel, we measured infants' babbling (human-annotated LENA home recordings) and general oro-motor activity (Infant Behavior Questionnaire). A One-way ANOVA on the difference in looking times to C-/V-mispronunciations revealed a main effect of IBQ (p = 0.006), no significant effect of babbling (p = 0.236) and a significant interaction IBQ x babbling (p = 0.012): oro-motor activity is linked to the development of the C-bias, but only in participants who produce more complex babbling. Work in progress is investigating links between babbling development, conversational turn-taking, quantity of input words uttered in the environment (as calculated by the LENA) and general oro-motor development (evaluated by chewing and eating skills, Lemarchand et al., 2020). These data will allow us to draw detailed individual profiles of perception/production skills in our infant group.

Visual speech enhances children's looking but does not speed naming: A priming study

Authors: Henny Yeung; Theresa Rabideau (University of Ottawa), Margarethe McDonald (The University of Kansas), & Tania Zamuner (University of Ottawa)

How multimodal information is integrated in children's speech remains an active area of research. Following predictions from adult neuroimaging models, we ask here whether visual speech processing has distinct connections to speech production versus perception tasks. We previously measured 2-8 year-olds' looking to a target object (e.g., ball) over a distractor object (e.g., coat) after children either saw a visual prime (a face silently articulating ball), heard an auditory prime (the word ball), or were presented with an audiovisual prime (a face saying the word ball). Results suggested increasing target-object looking across age in V, A, and AV modalities, and although visual speech had comparably weaker effects, it reliably increased in strength from the youngest to oldest ages. The current study investigates whether children were able to use visual speech to prime spoken word production in an almost identical procedure. Instead of two target images, however, only one image was shown (e.g., ball), which was preceded by the same V, A, or AV primes, which presented either the target word (ball), or an unrelated word (coat). Naming latencies for the target object were also recorded instead of looking times. Data collection is ongoing but results to date from 48 children in the 4-6 year range (M = 5;4 years) show strong priming effects in AV and A conditions, but surprisingly, no priming effect or age-related improvement in the V condition. Overall, we replicate the finding that visual speech is less effective than audio speech at activating (or inhibiting) lexical representations in children. Critically, we also show that visual speech is far more effective at enhancing looking (a perceptual skill) than speeding word naming (a production skill). This suggests a rich avenue of future research that investigates why visual speech may interface differently with children's perceptual versus productive lexical development.

Toddlers' speech monitoring of their own and others' (deviant) productions

Authors: Natasja Delbar; Fleur M.H.G. Vissers (Radboud University), Imme Lammertink (Radboud University), Paula Fikkert (Radboud University), & Clara C. Levelt (Leiden University)

Typically developing children around the age of two often do not (yet) produce all words correctly, for example, they may produce the Dutch word bloem 'flower' as *[bum] (Beers, 2003). What underlies these deviations in the children's productions remains unclear (e.g., articulatory difficulties, encoding difficulties, and/or deviant lexical representations). To locate the source of these deviant productions we need to study both speech production and perception. We will present pilot data from two experiments with typically developing two-year-olds who participated in both a production and a perception experiment. In the production experiment, the children were prompted (by the experimenter saying 'hmm?') to repair deviant productions of target onset consonant clusters during a picture-naming game. This triggers self-monitoring, the mechanism of perceiving one's own productions and using observed mismatches with the target to adjust subsequent productions (see also Levelt et al., 2023). By analyzing both phonologically and acoustically how deviant productions are repaired, this experiment disentangles word-form encoding errors from segmental representation errors. In the perception experiment the children listened to stories containing target words pronounced correctly (e.g., bloem 'flower') or with phonological deviation. Two types of deviant productions were included; (1) the pronunciation the children used themselves (e.g., *[bum]) and (2) random deviations (e.g., *[dum]). This experiment provides information about the level of detail in children's lexical representations of words they know either actively or only passively, and words they produce either correctly or with deviation. We will end by discussing the pros and cons of these methods and the implications for theoretical models of (toddler) language processing.

Symposium: Parent-child interaction in deafness and language development: methods, data and applications

Speakers: Gary Morgan; Martina Curtin; Evelien Dirks; Mario Figueroa; Ciara Kelly

Parent–child interaction in the early years plays a central role in a deaf child's language development. The symposium addressees why this is challenging and how it can be changed.

Everyday routines for deaf and hard of hearing children: A systematic review assessing PCI

Authors: Martina Curtin; Evelien Dirks and Amy Szarkowski

"Parent-child interaction (PCI) is known to influence deaf children's developmental outcomes. Even with advances in early identification of hearing differences and earlier exposure to sign language and/or earlier introduction of the hearing technology (when families chose to use them and when they are likely to benefit a child), developmental outcomes of deaf children can be altered, informed at least in part by their early experiences with caregivers. Ninety percent of deaf children are born to hearing parents who have little experience of deafness, so families need to rapidly acquire knowledge and skills in how best to communicate with and foster the development of their deaf children. There is a need to better understand the relationships and bi-directional interaction effects between caregivers' and their deaf children, particularly as they pertain to developmental outcomes. Further, the majority of PCI research for deaf infants centres around play and book reading, which could be seen as a luxury activities for some families. This current systematic review will focus on parent child interaction within the context of everyday routines and investigate a wide range of developmental outcomes.

Aims: 1) What are the range of parent behaviours assessed or described in PCI among dyads in which the child is deaf?

2. How are PCI behaviours assessed?

3. Which daily routine contexts involving deaf children have been explored?

4. How are parent behaviours, child behaviours, parent-child interactions, and parent-child routines related to child development outcomes?

Methods Used: A systematic review (SR) with narrative synthesis was conducted on Covidence software, following guidance from the Cochrane Handbook for SRs. Each included study was independently reviewed by two authors. The main themes of the review will be presented."

Look at me! Interactions between deaf babies and their parents

Authors: Evelien Dirks;

The early parent-child interactions are critical for children's overall development. They shape children's language, social-emotional and cognitive development. Interactions between deaf children and their typical hearing parents can be more challenging. Most typical hearing parents have no prior experiences with deafness and they may experience feelings of insecurity when raising their child. They are faced with challenges in interaction and communication. Previous research showed more difficulties in establishing and maintaining joint attention and more parent directive behaviour. In the present study we examine the early interactions of deaf babies and their parents in comparison to typical hearing babies. This is one of the first studies that focuses on a very young age group of deaf children. In the study 30 deaf and 30 typical hearing babies between 2 and 6 months of age and their caregivers participated. Video recordings of a free play activity and a daily routine activity (diaper changing) of the babies and their parents were made in the home environment. The interactions were coded for parental sensitivity, intrusiveness and joint attention. Results suggest systematic differences in the timing and quality of early interaction patterns across groups. This study contributes to our knowledge on the early interactions of babies and their parents. Based on the findings recommendations for early intervention will be discussed.

Linguistic input to deaf toddlers with hearing parents

Authors: Mario Figueroa; Gary Morgan

Children's language may be affected by the linguistic-communicative environment, especially during the first years of life. In the case of deaf children, previous studies have shown the importance of good stimulation for

later language and academic development. However, fewer studies have focused on very early stages of development and therefore on infants with little language and auditory experience. Fifty-one toddlers with and without deafness participated in this study. All were living in Catalonia and ranged in age from 10 - 40 months. Deaf toddlers wore hearing aids or cochlear implants and were exposed to a spoken language. Toddlers and their parents participated in the Gallery Art Task. In this task there are 5 pictures distributed around the room and the adult must capture the child's attention and explain and discuss each of the pictures for 5 minutes. Parent-child interactions were recorded, transcribed, and coded for analysis.The results showed significant differences between the communicative exchanges of parents with deaf children and parents of hearing children. Linguistic stimulation received by the infants shows a great variability, both in quality and quantity of language provided by their parents. Linguistic input differs from group to group and is therefore conditioned by deafness. Speech therapy must take these aspects into account in order to provide optimal language learning environments.

Arriving at a consensus on the assessment of parent-child interaction with deaf and hard of hearing

Authors: Martina Curtin; Madeline Cruice, Ros Herman and Gary Morgan

"Most deaf babies are born to hearing parents who need to learn how to adapt their communication with their deaf child. This is important because the quality of parent-child interaction (PCI) predicts how well a deaf child develops language. Teachers of the Deaf and Speech and Language Therapists support families with communication in the home. At present, there are not any deaf-specific assessments that can appraise PCI. Preliminary work has uncovered which parent behaviours and approaches are used in PCI assessments across international research and practice. The next step is to arrive at agreement on the core content and the best practices of a new PCI tool for deaf infants and their families.

Methods. An international sample of expert academics and practitioners (n=83) were recruited to take part in this two-round electronic Delphi study. Participants were presented with 69 statements focusing on (i) which parent behaviours were important to assess and (ii) which approaches should be used in a PCI assessment. Participants rated the extent to which they agreed or disagreed with each statement on a five-point Likert scale and gave comments to support their response. Consensus was defined as >80% of participants rating the statement as 'highly important' or 'essential'. If consensus was not reached, participant comments were used to generate new statements which were rated in the next round.

Results. Expert participants achieved consensus on 52 statements. Consensus on statements ranged from 80-99%. A further six statements (achieving consensus of 75-79%) were also subsequently included following a review of the participants' comments, of how ratings of these six items had changed between rounds, and feedback from our patient and public involvement group. A syntheses of the main themes to come out across these statements will be discussed in the presentation. The e-Delphi has enhanced our understanding of which parent behaviours and approaches to assessment should be included in a PCI assessment."

Family-centred intervention to promote parent communication strategies with deaf infants and increas

Authors: Ciara Kelly; Danielle Mathews, Gary Morgan

Infant–parent interaction forms the foundation for language learning. For the majority of deaf infants, hearing loss can impact access to, and the quality of, communicative interactions, placing language development at risk. Support for families to meet the challenges faced during interaction is highly variable in the United Kingdom. Further, hearing aid use is at its lowest and most variable in the early years, reducing access to communicative interactions and subsequently undermining the benefits of family-centred support to provide a rich, language-learning environment. We discuss a series of studies that take steps towards more standardised but tailorable family support. In study 1, we co-produced an instructional, video-based intervention, testing for feasibility in terms of behaviour change in seven communicative strategies and the acceptability of the strategies and video delivery. Parents of deaf infants (n=9) increased their use of the majority of behaviors and found content and delivery acceptable. However, further development was required to: (a) support use of semantically contingent talk and attention getting strategies to elicit infant attention, and (b) ensure the information was provided in a bite-size format that could be tailored to individual families. In study 2, the intervention was refined based on findings from study 1 and assessed for seven dimensions of acceptability with 9 parents and 17 professionals, who reported similar high acceptability scores. In the final study, we discuss the development of a co-produced intervention grounded in the principles of behaviour change theory, that aims to increase hearing aid use during the first years of life critical for spoken language development. Future research needs to test the effectiveness of such interventions and explore the best means of laying a strong social-communicative foundation for later language in deaf infants.

Symposium: Screen time and children's emerging language and literacy skills, and parental attitudes

Speakers: Suvi Stolt; Anett Sundqvist; Monika Abels; Peixin Nie; Riikka Mustonen

This symposium focuses on the associations between screen time use, parental attitudes on screen time, and emergence of language ability in typically developing children aged between 1 month - 5 years, and in those with hereditary risk for dyslexia.

Media and home literacy environment and the emergent literacy development in five-year-olds

Authors: Anett Sundqvist; Felix Koch, University of Linköping; Rachel Barr, Georgetown University

"Background and aim: The child's emergent literacy development is of utmost importance when starting formal schooling. The present study has examined factors in the home environment (parental teaching of letters, reading, colors, sound, shapes), with home screen media environment and parental attitudes and the relation to the child's emergent development.

Methods: The study involved 88 participants, 5-year-olds (55% boys) with their parents. Emergent literacy development was conceptually defined as a composite measure including vocabulary knowledge, letter recognition, phonemic awareness, and rhyme understanding. The home media environment was assessed with the Media Assessment Questionnaire-2 (Barr et al., 2020). Parental engagement in the home environment was measured using the STIMQ-2, including aspects such as book reading habits (e.g., number of books and dialogical reading), time spent reading, and educational activities at home, such as teaching colors, letters, and shapes. Kendall rank correlation was used to analyze the relationships between the variables.

Results: The findings revealed that the amount of time spent reading books and engagement in educational activities at home positively correlated with emergent literacy. However, watching television content and playing digital games showed a negative correlation with emergent literacy. It is not uncommon for children who watch content on YouTube to watch content not in Swedish, which was negatively correlated to the child's emergent literacy.

There was a positive correlation between the child's emergent literacy and the parents' active limitation of certain content and screen time. However, there was no correlation to whether the parents said they let the child use screens to learn educational content. A detailed content analysis will be conducted.

Conclusions: The child's emergent literacy development is positively associated with parental home activities such as teaching letters and numbers and the amount of time the parent reads to the child, and negatively associated with time spent with screens."

Parental phone use and children's communication attempts

Authors: Monika Abels;

"Background and aims: Previous work has shown that caregivers are distracted from their children's communication attempts when caregivers are using their phone (Abels et al., 2018; Van den Abeele et al., 2020). The current study is an attempt to replicate these results in Norway. Caregiver-child interactions will be analyzed in terms of communication that takes place while caregivers are engaged with only their child or other activities, particularly their mobile phones. Additional characteristics of the interactions are explored, such as: do children adapt their communication attempts depending on the length of the caregiver's involvement with the phone and is there adjustment to the modality of the caregivers' distraction.

Methods: For this study, 73 caregiver -child (1-66 moths of age) dyads were observed for approximately 10 minutes in different public places in northern Norway. The observations were done with a time sampling procedure focusing on caregivers' and children's behaviors. Caregivers' behaviors included child-directed behaviors and distractions through other activities, including using mobile phones. Children's behaviors included different types of bids for attention (e.g. by gaze, touch, using objects).

Results and conclusions: Approximately 55% of the caregivers used their phones during the observation period. In contrast to previous studies, Norwegian caregivers used their phones more frequently but overall not longer than caregivers in previous studies in the Netherlands. In line with the previous results, Norwegian caregivers showed fewer, less timely and weaker responses to their children when they are using their phones. Preliminary results indicate, that children adapted to the caregivers' distraction by increasing movements and decreasing

auditory signals. Exploratory analyses also showed that caregivers were less likely to respond, the longer the phone usage last, although the children did not change their bid intensity. The results are discussed in terms of potential effects on caregiver-infant communication in general these results imply."

Screen time from infancy to pre-school age - associations with language outcomes and dyslexia risk

Authors: Peixin Nie; Paula Virtala and Teija Kujala, University of Helsinki

"Background and aims: Excessive amounts of screen time can have negative effects on language and literacy skills in early childhood. These environmental factors are essential to acknowledge in children who are already at inherited risk for language development delays due to, for example, parental dyslexia. The present study aimed to investigate 1) the trajectory of screen time in early childhood and whether it was affected by parental dyslexia; 2) whether the amount of screen time at early ages could predict the later verbal and cognitive test performance.

Methods: In the DyslexiaBaby longitudinal study, we have followed the language development of over 200 children from birth to school age — 155 children in the dyslexia-risk group and 48 children in the control group. The amount of screen time of various contents, e.g., screen time on child programs, adult programs, games, or others, has been collected with parental questionnaires at 6 months, 1, 2, 3, 4, and 5 years. The children's language and cognitive skills have been evaluated with standardized neuropsychological tests at 2 years and 4-5 years.

Results and Conclusions: Our preliminary results show increases in the amount of screen time with age during early childhood with no marked effects of familial dyslexia risk on the amounts. Higher verbal IQ scores, for example, in word knowledge and word reasoning subtests, were associated with less amount of screen time. These potential relationships can contribute to providing recommendations to parents and early childhood educators on the amount and content of screen time for young children, especially those at increased risk for language difficulties."

Parental attitudes, children's screen time and lexical development in five European countries

Authors: Riikka Mustonen; R Torppa R, J Kuvac Kraljevic, A Matic Skoric, A Schults, K Muszyńska, P Karp, G Krajewski, H Gram Simonsen, N Gram Garmann, T Tulviste, S Stolt

"Background and aim: Previous studies suggest an inverse association between children's screen time and lexical ability. However, the association may not be straightforward, since factors like parental attitudes toward screen time may influence the time children spend on screen, and, in turn, on children's lexical development. This study examined how parental attitudes toward screen time relate to both children's screen time and lexical skills in five European countries.

Methods: Participants were 36- to 42-month-old children and their parent (mothers 95.6%) from five countries (N=319): Finland (n=73), Estonia (n=99), Croatia (n=49), Norway (n=12; recruitment ongoing), and Poland (n=86). Children's lexical skills were assessed with the Communicative Development Inventory III (vocabulary section, n=100 words). Data on children's screen time spent alone in minutes, and the parental attitude toward screen time in terms of talking ability (screen time is useful/harmful to talking) were collected using the Screen Time Questionnaire (Schults & Tulviste, 2019). Statistical analysis involved Mann-Whitney U-test and linear regression (dependent variable: lexical skills; independent variables: screen time alone; screen time attitude (0=useful [very+rather useful], n=170; 1=harmful [very+rather harmful], n=60; category could not say was excluded, n=87); children's age; maternal education (0=below Bachelor's degree; 1=Bachelor's degree or higher).

Results: Of the parents, 53% considered screen time useful to talking ability. However, children had better lexical skills (U=6008.5; p=.03) and they spent less screen time alone (U=3592.0; p=.03) when parents considered screen time harmful to talking ability. When children's age and maternal education were controlled in the regression analysis, the independent variables children's screen time alone (β=-.06; p=.12) and the attitude toward screen time (β=5.74; p=.06) were approaching significance when explaining lexical skills.

Conclusions: Parental attitudes are important for lexical skills and can affect the time children have screen time alone. Recognizing parental beliefs about screen time is essential for practitioners."

Symposium: The future of research in language acquisition is constructivist

Speakers: Caroline Rowland; Padraic Monaghan; Anna Theakston; Elena Lieven

We describe a constructivist framework for research on language acquisition, focusing on five concrete principles which, we argue, characterise the process by which the learning and processing mechanisms in the brain build mature linguistic knowledge

Introducing a constructivist framework for language acquisition research

Authors: Caroline Rowland; Gert Westermann, Anna L. Theakston, Julian M Pine, Padraic Monaghan, Elena V. M. Lieven

In this first presentation we introduce the five principles of the constructivist framework. We describe our framework as constructivist because at its heart is the idea that each child uses a toolkit of learning and processing mechanisms to construct their language using information sampled from their multimodal environment (principle 1). However, the framework also incorporates key ideas from other traditions in developmental science, combining and extending them, informed by empirical findings and theoretical debates. As specified by traditional nativist approaches, it recognises that children are born with sophisticated learning mechanisms that are innately specialised to "organise and incorporate experience" (Greenough et al., 1987: 539; (principle 2). As specified by traditional empiricist approaches, it acknowledges that the role of the environment is substantial and multifaceted, and that learning mechanisms combine multimodal information in the environment at different levels (e.g., statistical, conceptual and socio-cultural) such that the knowledge that they construct integrates across these levels (principle 3). In line with traditional constructivist approaches, the framework proposes that children are not passive receivers of information, but selectively interact with their environment to navigate the large number of potential cues available to them (principle 4). And finally, the approach is developmental, in line with dynamic systems theories (Thelen & Smith, 1994): the learning process is constrained at each point in development by children's current knowledge state and the processing limitations under which they operate, which together determine what gets learned (principle 5). Note that individually none of these ideas is new. Thus, our intention is not to claim that we are presenting, in each principle, a radically new concept. Instead, we are attempting to shift the foundations of the debate, by showing how bringing these ideas together in a constructivist framework yields a more tractable, more plausible, approach to explaining the process of language acquisition.

Simultaneously learning words and grammar via simple associative learning

Authors: Padraic Monaghan; Rebecca L. A., Frost, Kirsty Dunn, Patrick Rebuschat

Different levels of language structures, such as vocabulary and grammar, are often assumed to be underwritten by different cognitive processes (Marchetto & Bonatti, 2014; Peña et al., 2002), operating at distinct stages of children's development (Gleitman et al., 2005), such that basic vocabulary tends to be acquired before grammar. Evidence for the differentiation has typically emerged from controlled settings where multiple potentially confounding cues are not available to support the learner. However, these multiple environmental cues in naturalistic language learning situations may constitute a vital role in how the child is learning, and from what information (as per principle 2). In a series of studies, we have investigated how learners may acquire both vocabulary and grammar from cross-situational statistics between sentences in a novel language describing dynamic scenes. From a single pairing between a sentence and a scene, it is not possible to determine which word refers to which object, action, or property of the objects, and nor is it possible to determine what constraints between words in the sentence define the grammar. However, over multiple trials, the associations between certain words occurring in different grammatical roles in the sentence can be acquired. We have found that when the multiple sources of information in the environment interact with the language, both vocabulary and grammar are acquired, simultaneously, but some aspects of the language are learned less easily than others, which appears to depend on the variability present in the language structure. For instance, when the language varied in word order, morphological information about subject and object roles of was learned less quickly than information about word order constraints and verb and noun vocabulary. Word order constraints and verb vocabulary were learned quickly and robustly from a mechanism sensitive to the simple associations available in the combination of world and language (see principle 3). Though there remains the possibility that vocabulary and grammar are learned in very different ways (e.g., Ullman, 2016), our work highlights for which language learning phenomena such distinctions are not yet necessary in order to explain behaviour.

A multiple cue approach to the acquisition of complex adverbial sentences

Authors: Anna Theakston;

Complex sentences such as multi-clause adverbial sentences (e.g., 'before she submitted the paper, she had a coffee') present a puzzle in acquisition because their use and interpretation depends on the integration of multiple sources of information. For example, the child must establish a rich lexical representation of specific connectives (e.g., the temporal meanings of before and after, the causal/conditional meanings of because and if) as well as knowledge of the syntax governing correct use. In addition, adult-like use requires an understanding of specific form-meaning mappings. For instance, in languages like English, the child must learn when to place an adverbial clause sentence-initially or sentence-finally (e.g. Tom painted the fence before he washed the car vs. Before Tom washed the car, he painted the fence), a process that likely relies to some extent on both principles of iconicity (the order of events in the real world maps onto the order of events in the sentence) and an understanding of discourse pragmatics. Sentences involving causal (e.g., because) and conditional (e.g., if) connectives can additionally require integration of information about the real world and/or from the speaker's knowledge and beliefs (e.g., I think she's a queen, because she is wearing a crown). Furthermore, many complex sentence types convey a range of different pragmatic relations (e.g. Content, Speech-Act, Epistemic) and perform a number of illocutionary acts (e.g. Ask, Agree, Command, State/Claim). In this talk we will present empirical data from a number of corpus and experimental studies of adverbial clause acquisition that demonstrate how children are sensitive to a range of different sources of information, and how their knowledge changes over development. We will argue that constructivist accounts based on the five principles outlined in this symposium (especially principles 3, 4 and 5) provide a fruitful avenue to understanding these data.

Sensitivity to low-level surface features in input explains the acquisition of complex inflection

Authors: Elena Lieven; F Engelmann, B. Ambridge, S. Granlund, J Kolak, J Pine, M Szreder, A. Theakston, V-M Vihman

Many languages show complex patterns of inflectional morphology. Because children seem to master these types of complex system early, many theories of acquisition posit innate symbolic rules or a combination of symbolic rules with some kind of surface-form analogy and/or stored exceptions. We report two studies of nominal and verbal inflectional marking. In the study of noun case-marking in Polish, Finnish and Estonian, 3-to-5-year-old children were tested on their production of different cases when presented with nominative singular forms. Overall error rates were low, but with pockets of high error in lower-frequency parts of the system. Age, token frequency (Polish and Estonian) and phonological neighbourhood density (PND; Polish, Finnish and Estonian) were significant predictors of correct production, with the effect of PND greater for less frequent forms. Thus, the errors patterned as if learning was from surface-level distributional regularities in linguistic input and analogizing across forms that share phonological similarities. The errors usually involved replacing low-frequency targets with higher-frequency lexical forms of the same verb or higher-frequency markers from the correct target case. A second study reports the learning of Polish and Finnish verbal inflections. Using a novel elicitation method, all six person-number forms were elicited from 3-to-5-year-old children. The results were: Low overall error rates, but higher error rates for low-frequency forms; Substitution of more frequent forms of the same verb; Near misses (e.g., correct person but incorrect number) or conjugation class errors (correct person/number but suffix from wrong class). Thus, error patterns were predicted by token frequency and the process of analogy across phonologically similar forms, as demonstrated by an effect of PND (see principles 3 and 4). Both studies show learning based on surface forms which cannot be explained by approaches that posit abstract symbolic rules. We conclude by considering how these findings can be applied to other typologically complex inflectional systems.

Symposium: Timing in language acquisition: Why are some phenomena acquired late?

Speakers: Petra Schulz; Angeliek van Hout; Esther Ruigendijk; Esther Rinke; Ianthi Tsimpli

Overall, children are very good language learners. We will discuss why certain syntactic and semantic phenomena are acquired late, after age 5, and how consideration of different approaches can help us understand timing in language acquisition.

The late acquisition of (certain) postverbal subjects by Italian heritage children

Authors: Jacopo Torregrossa; Andrea Listanti

Heritage language (HL) speakers seem to diverge from monolingual speakers in the acquisition of syntax–discourse interface phenomena. However, most of the studies reporting this finding do not make any distinction between different types of syntax–discourse interface structures. Therefore, it is an open question whether these structures are difficult for HL speakers across the board or whether different types of structures are associated with different acquisition outcomes. We investigate whether the timing of the acquisition of syntax–discourse interface structures among monolingual children affects their acquisition by HL children. We consider the acquisition of the alternation between preverbal and postverbal subjects with unaccusative, unergative and transitive verbs in Italian. This alternation involves the syntax–discourse interface across all verb types. However, mastery of this alternation has a different timing in monolingual acquisition depending on the verb type: it emerges earlier in association with unaccusative verbs than unergative and transitive ones. We elicit narratives in Italian from 42 Italian heritage children living in Germany and ranging in age from 7 to 14 years. The children show a good mastery of the alternation between preverbal and postverbal subjects with unaccusative verbs, whereas they exhibit difficulties with the same alternation in association with transitive and unergative verbs. The results of the study suggest a gradient interpretation of heritage speakers' difficulty with syntax–discourse interface structures, with timing in monolingual acquisition being a relevant factor that modulates the degree of this difficulty.

Why some complex sentences containing temporal connectives are very late: Evidence from child Greek

Authors: Petra Schulz; Christos Makrodimitris (Goethe University)

"Children have difficulty comprehending complex sentences with temporal connectives until late childhood, but the reasons for this difficulty remain controversial. We tested six- to twelve-year-old children to assess how the iconicity of event-language mapping, type of connective, and clause order mediate the comprehension of temporal sentences. Sixty monolingual Greek-speaking children and 15 adult controls completed a picture-sequence selection task in which they judged after- and before-sentences in iconic and non-iconic order (e.g., He read a letter, after/before he ate an apple; After/Before he ate an apple, he read a letter).

Up to the age of twelve, children did not reach adult-like comprehension of the connectives; performance in non-iconic AFTER-sentences was significantly lower than in the other three conditions across ages. This pattern suggests that violation of iconicity negatively affected comprehension of AFTER but not of BEFORE.

We conclude that neither iconicity, connective, nor clause order can fully explain these findings and propose an account based on the interaction of iconicity and clause order: in languages with clause-initial connectives like English or Greek, non-iconic, sentence-medial AFTER requires revision of the initial event representation, resulting in an event-semantic kindergarten-path that children find difficult to overcome. In this case, children may maintain their initial incorrect representation. Non-iconic BEFORE-sentences are not harder than their iconic variant, because sentence-initial BEFORE serves as an early cue of the non-iconic order, so no reanalysis of the event-representation is needed.

The event-semantic kindergarten-path effect predicts that children should master non-iconic BEFORE earlier than non-iconic AFTER. This was borne out in our results; 23 children had mastered non-iconic BEFORE but not non-iconic AFTER, whereas no child had mastered non-iconic AFTER but not non-iconic BEFORE.

The second prediction is cross-linguistic in nature: if cues for the event-semantic (re)analysis appear non-clause-initially (e.g. Tamil, Mandarin), the acquisition path may be different."

Pronoun interpretation in acquisition: early in German, and late in Dutch. Bilingual evidence

Authors: Esther Ruigendijk; Petra Hendriks (University of Groningen)

"Dutch-speaking children, like English-speaking children, make mistakes in the interpretation of pronouns until age 7 (the so-called Pronoun Interpretation Problem, PIP), whereas children speaking German or a Romance language already interpret pronouns correctly from age 4. The question is why the interpretation of pronouns is early in some and late in other languages. Explanations are sought in differences in the pronominal systems of the languages, or in external task related factors. To understand whether language internal or external factors are relevant for the lateness of this phenomenon, we address the question: what happens if a bilingual child acquires a language with late (Dutch) and one early acquisition (German) of pronoun interpretation? There are four possible outcomes: Dutch influences German: a PIP in both languages; German influences Dutch: no PIP in either language; bidirectional influence: smaller PIP in Dutch, increased PIP in German; no influence: a PIP in Dutch, no PIP in German.

We tested 21 Dutch-German bilingual children, age 3;8 to 6;11 with a picture selection task that included transitive sentences with a reflexive or a personal pronoun. Each child was tested in both languages, in separate sessions, with at least 1 week in between. Whereas the children performed very well on the interpretation of both pronouns and reflexives in German, the same children made more errors on pronouns than on reflexives in Dutch.

These results indicate that there is no cross-linguistic influence in pronoun interpretation. We find a PIP in Dutch, but not in German. The results also show that the pronoun interpretation problem is not a task effect or a language-independent effect of processing as has been argued before. Rather, it seems to originate in the grammatical system of the specific language: the observed cross-linguistic difference may arise from a stronger ambiguity of Dutch pronouns, which causes their late acquisition."

Are late acquired structures challenging for heritage speakers?

Authors: Esther Rinke; Cristina Flores (University of Braga)

"Heritage speakers (HSs) acquire their Heritage language (HL) mainly in the family and in the context of a dominant environmental language. Their linguistic competence may show certain particularities which are often similar across different HL and independent of the environmental language. In this talk, I will put forward the hypothesis that late acquired structures in monolingual language acquisition are particularly challenging for bilingual speakers. I will present results of two studies on European Portuguese (EP) as HL: one on the interpretation of null/overt subjects and one on the production of null/clitic objects.

Based on an offline sentence interpretation task, we investigated subject interpretation in German/EP and Spanish/EP children/teenagers (aged 9-16) and compared them to age-matched monolingually raised Portuguese children and adult controls. The results show no effect of the contact language in the bilingual groups. Differences between monolingual and bilingual children arise in the null subject condition with respect to syntactic context (intersentential/cataphoric vs. anaphoric- context). However, in the overt pronoun conditions, monolingual children show the same non-adult-like behaviour like the bilinguals. This indicates that the adult-like interpretation of overt pronominal subjects is challenging for bilingual speakers and also acquired very late in monolingual acquisition.

Based on an elicited production experiment, we investigated object realization in monolingual EP and bilingual German/EP children (age 7-10). The bilingual children were sensitive to the different pragmatic conditions (not immediately accessible vs. immediately accessible referents), but they produced higher amounts of object omissions in comparison to age-matched monolinguals. However, younger monolinguals (age 5-6) produce the same omission rates as the bilinguals, showing that this area also develops late in monolingual language acquisition.

Taken together, the results of both studies indicate that structures which are acquired late in monolingual acquisition are particularly challenging for heritage speakers."

Symposium: Validating the Q-BEx questionnaire on language experience in multilingual children

Speakers: Sharon Unsworth; Ludovica Serratrice; Cecile DeCat; Laurie Tuller; Draško Kašćelan

The goal of this symposium is to present the results of an international validation study whose goal was to test and optimize the design and use of questionnaire on language experience in multilingual children..

Predicting language outcomes using the Q-BEx questionnaire

Authors: Ludovica Serratrice; Philippe Prévost

Typically, the more opportunities children have to hear and use a language, the better the outcomes, although distinct domains may be differentially affected. The association between outcomes and amount of exposure has been shown to be generally stronger for vocabulary breadth than for morphosyntax, while there is less information for vocabulary depth. The extent to which more qualitative aspects of bilingual children's language experience predict language outcomes is less clear. The Q-BEx questionnaire offers a detailed profile of both quantity and quality of language experience. In this presentation we investigate the extent to which the language background and experience variables derived from Q-BEx predict children's SL outcomes for vocabulary breadth and depth (Study 1) and morphosyntax (Study 2). These studies involved 233 multilingual children who were administered the PPVT, the Word classes subtest of the CELF-5, and the LITMUS sentence repetition task to assess vocabulary breadth, vocabulary depth and morphosyntax, respectively. In both studies we included the same set of Q-BEx predictors and added measures of short-term memory (STM), working memory (WM), phonology, and non-verbal IQ (NVIQ). Significant predictors were i) for vocabulary breadth: age, NVIQ, STM, homework in the SL, highest caregiver education, and number of older siblings; ii) for vocabulary depth: language concerns before 4, age, STM, and highest caregiver education overall and in the SL, and iii) for morphosyntax: age of first words, age, STM and WM, phonology, vocabulary breadth and depth, frequency of reading and tech activities in the SL, and current exposure to the SL. Decision tree analyses furthermore allowed us to tap into individual profiles and better understand the non-linear relationships and complex interactions between children's language background and experience, their cognitive skills, and language outcomes. The theoretical and applied implications of these findings will be discussed.

How detailed do measures of language experience need to be? A cost-benefit analysis using the Q-BEx

Authors: Cecile DeCat;

Parental questionnaires vary considerably in how they quantify language exposure and use. Some require a detailed description of children's daily routines, whereas others restrict themselves to more general questions about children's language experience. The rationale behind more detailed questionnaires is that more information has the benefit of greater accuracy, though it costs more time to complete. The Language & Exposure module in the Q-BEx questionnaire offers users the options of collecting information at varying levels of detail. For example, exposure over time can be estimated either by using a single question about age of first exposure or as a cumulative measure weighted for different time periods. In this presentation, we use data gathered using these different questions to investigate which level of detail is (i) optimal to effectively balance "cost" and "benefit", and (ii) minimally required to reliably inform research and practice. To do this, we determined the extent to which using different measures of language exposure were better able to predict bilingual children's outcomes in the societal language (SL) (scores on morphosyntax, vocabulary breadth and depth) and the heritage language (HL) (parental estimates of oral proficiency). After first generating an optimal model containing all other relevant variables (e.g., age, working memory), we subsequently re-fitted the model each time using a different measure of exposure. Subsequently, adopting an information-theoretic approach to model fit comparison, we were able to identify the best-fitting model. For SL outcomes, this contained age of onset, with the models containing more detailed measures of exposure also receiving support for vocabulary. For HL outcomes, the best-fitting model contained the most detailed exposure measure, though the models with less detailed measures were likely good enough (depending on the goal and population). We will use these findings to make suggestions for the use of Q-BEx in research and practice.

Using the Q-BEx questionnaire to identify risk for language impairment

Authors: Laurie Tuller;

Inclusive population sampling entails that participant samples will necessarily subsume children who have a language disorder. This is especially important in studies on bilingual children, who are frequently subject to

either over- or under-diagnosis for language impairment because of their bilingualism. Researchers therefore need to be able to identify children likely to have a language disorder. There is likewise a need, in educational settings, to understand the nature of language difficulties experienced by all students. And, of course, in clinical settings, there is an obvious need for a rich empirical base for optimal detection of language disorders in bilingual children. Identifying risk for language impairment was incorporated into Q-BEx in a dedicated module (Risk Factors), containing just three short questions: age of first word (in any of the child's languages), age of first sentence (in any of the child's languages), and any parental concerns about early language development (excluding languages new to the child). In this presentation, we investigate whether parents' answers to these questions can be used to derive a score which can flag children who are likely to be at risk for language impairment. Our results suggest that this is the case. Scores using Q-BEx flagged children independently known to be at risk and furthermore predicted children's performance on the quasi-universal version of LITMUS-nonword repetition, as well as sentence repetition in the SL. Equally important to researchers, educators, and clinicians is obtaining information about a child's skills in the HL. It will be shown that parental assessment of children's skills in the HL, taking into account their assessment of the SL as well, may provide another angle for flagging a child at risk for language impairment. In other words, this "quick and easy" module delivers, yielding a red flag index useful for researchers, educators, and clinicians.

Putting the Q-BEx questionnaire to a quality test

Authors: Draško Kašćelan;

Language background questionnaires are commonly completed by parents without help from researchers. While this approach is practical when an interview with the parent cannot be arranged, self-administration may lead respondents to accidentally provide inaccurate information. Researchers using such questionnaires do not generally report on respondents' errors of this kind, even though they may be informative about the reliability of certain questions and furthermore provide useful information for questionnaire design and use more generally. As part of our validation study, and in the interests of full transparency, this presentation puts the Q-BEx questionnaire to a quality test by cross-validating parents' answers internally (i.e., with other questions) and externally (i.e., with children's scores on language tasks). Most parents (n=246) completed Q-BEx independently, but for others (n=54) assistance was given. The analyses focus on: (i) data loss, (ii) inconsistencies, and (ii) implausible answers. Our findings demonstrate minimal data loss caused by the questionnaire design. Where inconsistencies were found, these involved parents' estimations of age of first exposure, and their ability to complete the most detailed version of the Exposure & Use module. For example, for about 1 in 10 children, the reported age of first exposure to each language was inaccurate when cross-checked against answers concerning amount of exposure in the early years. Similarly, for about 1 in 5 children, weighted estimates of exposure/use sometimes contained implausible answers (e.g., the child did not spend any time at school), though this dropped to 1 in 10 in France, where assisted administration was comparatively frequent. Finally, when parents were asked to estimate children's proficiency in various ways (i.e., in general terms, in comparison to other multilinguals, in terms of their own satisfaction), their answers were highly consistent, but also different enough to suggest they tapped into different aspects. Implications for Q-BEx users are discussed.

Using the Q-BEx questionnaire in schools

Authors: Sharon Unsworth;

Teachers in mainstream schools are often unaware of the language experience and background of bilingual children in their classroom. For many (but unfortunately not all), this is not because of a lack of interest, but more often due to a lack of time to obtain such information and in many cases the result of a language barrier between them and the children's parents. The Q-BEx questionnaire is available in many languages and thus offers teachers access to information about children's language experience and background in both the societal and heritage languages which may otherwise remain unavailable. Information about prior experience with the societal language is essential as this has direct consequences for children's level of proficiency in that language at school entry as well as their rate of acquisition throughout the early years of schooling. This can serve as a starting point for differentiated teaching strategies. Information about the heritage language is equally important as this allows teachers to better understand (and hopefully make use of) children's full linguistic repertoire. As part of the output available to users, Q-BEx provides this information in a compact report containing key findings alongside an explanation of key variables written in accessible language. In short, then, the Q-BEx questionnaire has considerable potential for use in schools. In this presentation, we investigate (i) to what extent teachers also see this potential, (ii) how they assess its useability and the compact report, and (iii) whether there are factors which would prevent them from using Q-BEx in the future. To this end, we are conducting a focus group study with teachers (intended n=20) from a range of schools in the Netherlands. Teachers will report on

their thoughts and experiences by completing an online questionnaire and/or during an interview. Data collection is ongoing.

IASCL 2024 Symposia: Thursday Morning

07/18/2024, from 11:30 AM to 01:30 PM , Room P131

Symposium: A direct approach to global vocabulary assessment

Speakers: Margaret Friend; Celia Rosemberg; Florencia Alam; Naomi Havron; Michael Frank

Introducing four new adaptations of the Computerized Comprehension Task (CCT; Friend et al., 2012) presenters will discuss applications to bilingualism and understudied languages.

Scaling up: Increasing the age range and accessibility of early vocabulary assessment

Authors: Margaret Friend; Matthew McArthur, Diego Leon, and Melisa Gonzalez

"Vocabulary is a strong predictor of children's cognitive, academic, and social outcomes and an important measure of proficiency in the languages of bilingual children. However, direct measures often require lab- or clinic-based administration, limiting equitable and representative access. Recent research focuses on measures easily administered in community settings. For example, Bleses et al., (2021) extended a lab-based measure of receptive vocabulary for children up to 24 months of age in English, Spanish, and French (the Computerized Comprehension Task or CCT; Friend, et al., 2012) to 35-month-old children learning Danish. The task was implemented on a tablet and administered by preschool teachers. Similarly, Lo, et al. (2021) used a similar, tablet-based, task with Norwegian children administered by parents in the home. This report concerns the development of the Web-CCT in English and Spanish, bringing continuous vocabulary assessment from 18 to 60 months of age to scale.

We present data on a preliminary sample of 52 (27F) children (M=35.9; range=19 to 64 months): English monolingual (n=43), Spanish-English bilingual (n=7), and Spanish monolingual (n=2). The psychometric properties of the Web-CCT are strong. The English Web-CCT correlates well with age (r42=.866, p<.001) and converges with the MCDI:WS (Marchman et al., 2023; r17=.721, p<.001) and the ROWPVT-4 (Martin & Brownell, 2011; r16=.750, p<.001). Internal consistency is excellent (α=.982) and test-retest reliability is satisfactory (r13=.679, p=.008). Web-CCT Spanish-English conceptual vocabulary correlates well with age (r7=.916, p<.001) and converges with the ROWPVT-SBE (Brownell, 2012; r7=.775, p=.041). Internal consistency is excellent (α=.974) and test-retest reliability is promising (r5=.822, p=.088). These measures expand the opportunity for early vocabulary assessment to families without ready access to a lab or clinic and can be completed on a desktop, laptop, tablet, or cellphone anywhere with Wi-Fi access. We anticipate presenting data on 100 participants. Applications of this extended measure will be discussed."

Documentation of vocabulary acquisition in Bilingual Qom-Spanish children in Argentina

Authors: Celia Rosemberg; Florencia Alam, Gladys Ojea, Leandro Garber, Alejandra Stein, Carla De Benedictis, and Margaret Friend

This study documents vocabulary acquisition in bilingual Qom - Spanish indigenous children. The Qom ethnic group is one of the largest in Argentina (INDEC, 2010). Qom l'aqtaqa (a Guaycuruan language) is characterized by the morphological complexity of nouns and verbs, tending towards polysynthesis and agglutination. Only 44.3% of the Qom population over 5 years of age speak Qom l'aqtaqa at home (ECPI, 2004-2005). In rural communities language attrition has increased, due to the spread of social media and schooling in traditional Spanish monolingual contexts (Hetch, 2017). High quality bilingual education in the early years of schooling is crucial to fostering bilingual acquisition, intergenerational transmission, and cultural identity. We assessed Qom and Spanish vocabulary from preschool through the early school years to inform educational interventions and extend the literature on bilingual development. We developed adaptations of the Computerized Comprehension Task (Author, 2012) in Qom and Chaco Spanish. Item selection was based on word frequency in recordings of household interactions (corpus: Author, 2011- 2019) and interviews with native speakers. 70 bilingual children (x= 5.5 years; range=3.0 to 7.0) were assessed by monolingual Spanish and bilingual Qom teachers. Regression analyses revealed a positive trajectory in Spanish: the association between age and accuracy was positive (from 3 to 5 Φ= .751, p= .00 and from 5 to 7: Φ= .289, p= .048) and between age and latency was negative (from 3 to 5: Φ= -.661, p= .00 and from 5 to 7: Φ= -.222, p=.057). Qom showed a positive association with vocabulary from 3 to 5 (accuracy Φ= .506, p= .037 and latency Φ= -.780 p= .00), but the association with accuracy was negative from 5 to 7 years (Φ=.-.58 p=.00). This points to potential Indigenous language attrition relative to the majority language in the early school years.

Socioeconomic and cultural differences in lexical comprehension

Authors: Florencia Alam; Celia R. Rosemberg

The majority of the studies that have documented the effects of social inequality on lexical comprehension were built on a relatively small range of SES variation, since caregiver's education generally ranges between 12 and 16 years of schooling in the samples analyzed. Furthermore, almost all the studies have been carried out in the USA or in Western Europe. This paper delves into the impact of SES on the comprehension of different types of content words in Spanish-speaking Argentinian children, a population in which socio-economic differences are more striking than in the previously studied populations. Previous findings have shown group variability, particularly in low SES groups (Author, 2021), which need to be considered in vocabulary development research. Therefore, in this study we examine children's vocabulary comprehension in three socio cultural groups, distinguished by maternal education, place of residence and Indigenous heritage: semi-urban low-income Indigenous communities (IndLow), urban low-income (UrbLow) and urban middle-income (UrbMid). Using a performance based forced choice lexical recognition task implemented on a tablet (an adaptation of the Computerized Comprehension Task -CCT- Friend and Keplinger 2003), recognition accuracy and haptic response time to nouns, verbs and adjectives were assessed. 143 toddlers were tested. Regression analysis was carried out. Preliminary results that considered only data from UrbMidd and UrbLow showed overall SES effects on recognition accuracy ($\phi=1.1$, p=.00) but not on response time. Further analyses that considered lexical category revealed an interaction between SES and lexical category ($\phi=-0.23$, p=.00): UrbMidd children were only more accurate on the recognition of nouns and adjectives but not verbs. We expect to find differences between the three groups. The discussion links socio-cultural differences in children's performance to previous evidence regarding the characteristics of the three groups of children's linguistic experiences.

Adapting the Computerized Comprehension Task to Sub-dialects of Palestinian Arabic

Authors: Naomi Havron; Maali Jammal-Agbaria, Jawana Zoubi, Rawan Abu-Baker Watad, and Rana Abu-Zhaya

"The CCT is validated on resource-rich languages such as English and Spanish. It is important to adapt it to understudied languages. Arabic is such a language: There are few studies on language acquisition, despite its large number of speakers (e.g., the first CDI-WG parental-report questionnaire in Arabic was developed in 2021, but the data are not openly available, Abdelwahab et al., 2021). Thus, there is a need for assessment tools, like the CCT, for Arabic-learning children; however, developing them is challenging. Spoken Arabic has many dialects, varying greatly from one another - each dialect might need its own CCT. Second, the lack of resources and validated tests in Arabic make it hard to choose items, and to validate the CCT.

In this project, we are developing a CCT for two sub-dialects of Palestinian Arabic: the Northern-Triangle-Area and the Northern-Rural dialects. We based our word list on two sources: words from a Palestinian-Arabic parental-report tool (PA-CDI) for 18- to-36-month-olds (validated only for production, Hashoul Essa, 2018); and culturally-appropriate words from the English CCT. We created a preliminary list of 177 words, 22 of them were manipulation checks (easy words, e.g., "mother", and hard words, e.g., "pier"). Pediatric speech-language pathologists rated the words on their difficulty level. The chosen 100 words constitute the items for the CCT. They are matched for syntactic and semantic categories, and difficulty level.

We will test 150 infants aged 18-22 months and should have results by July 2024. Validity will be assessed in comparison to a parental-report of comprehension of the same 100 words as the CCT items, and by examining well-known effects from the language-development literature, such as an advantage for girls over boys. Reliability will be assessed by repeating 12 of the word pairs a second time at the end of the test."

Symposium: Bilingual Language Development in Varying Contexts: Insights from Longitudinal Studies

Speakers: Tamara Lautenschlaeger; Jessica Willard; Julie Smith; Johanne Paradis

How do young bilinguals develop in their two languages and why do they develop the way they do? This symposium presents findings from studies tracing bilingual development over several years for preschool- and school-age children in three countries.

Between-language Associations in Vocabulary Development in Bilingual Preschool Children

Authors: Tamara Lautenschlaeger; Alla Sawatzky, Jens Kaiser-Kratzmann, Steffi Sachse

"Theoretical background: Possible interdependencies between the languages of bilingual children regarding performance level and developmental trajectories are often discussed. However, to date only few studies have simultaneously investigated vocabulary development in both the majority and the heritage language. Research question: We aim to investigate the vocabulary development in bilingual preschool children regarding the relationship between the majority language German and the heritage language Turkish. Method: Data were taken from a larger longitudinal study, which investigates the language development in bilingual children in Germany (n = 423) over the course of the preschool age. Children in the subsample for the present analysis attended early childcare facilities in Germany and were exposed to Turkish as a heritage language through family members. Receptive and expressive vocabulary in German and Turkish were assessed annually. Only children with complete data in both languages for at least two measurement points were included in the present analysis (n = 40). Results: Cross-sectionally vocabulary performance in the two languages was positively correlated for receptive vocabulary, while a negative correlation was found for expressive vocabulary. Vocabulary growth in the two languages was positively correlated for receptive vocabulary, but there was no correlation between languages regarding growth in expressive vocabulary. Discussion and conclusion: The results suggest that the relationship between majority and heritage language differs between receptive and expressive vocabulary. These differences could indicate that receptive and expressive vocabulary are influenced by different factors. While receptive vocabulary might be more influenced by factors that affect both languages, expressive vocabulary may be more influenced by factors that are independent or in competition with each other."

How do Turkish– and Russian–German Speaking Preschoolers Develop Strong Bilingual Vocabulary?

Authors: Jessica Willard; Nathalie Topaj, Natalia Gagarina

"Understanding how strong bilingual language skills develop requires examining both heritage and majority language outcomes over time to identify periods of growth, slowing growth or even attrition, and how internal and external factors relate to such developmental patterns. Child-internal factors have been theorized to support development in both languages, while certain input-related external characteristics could support only one of the two languages (Hoff et al., 2021). However, such findings could also be specific to children's cultural context, specific language domains or analysis strategies.

Drawing on the BIVEM-study conducted within the Berlin Interdisciplinary Network for Multilingualism, we examine bilingual expressive vocabulary development from age 3-5 (n = 161) with two analytic approaches asking: 1) Is there growth in heritage and majority language vocabulary? 2) What developmental patterns co-occur? 3) Are there shared internal or external supports that predict high skills in both languages? Picture naming tests assessed expressive Turkish or Russian heritage and expressive German majority language vocabulary (SRUK, Gagarina, 2010; PDSS, Kauschke & Siegmüller, 2010), the SON-R nonverbal reasoning (Tellegen et al., 2007).

Variable-oriented growth curve models show much heterogeneity, but overall consistent growth in each language and no shared supports: Across the study period, girls have an advantage in heritage language vocabulary and children with stronger nonverbal reasoning in German vocabulary. Both an early start in preschool and exclusive use of the heritage language in the family support vocabulary in one language while posing a "risk" to the other. Preliminary person-oriented latent profile analyses suggest that various patterns of growth exist. A pattern of comparably strong vocabulary in two languages is supported by female gender and nonverbal reasoning, and can occur when exclusively the heritage language is spoken in the family. We discuss limitations (e.g., aggregating over heritage languages), and the specificity of findings (e.g., German context, research design)."

Examining Variability in the Oral Language and Early Literacy Trajectories of U.S. DLLs

Authors: Julie Smith; Jessica A. Willard, Carol Scheffner Hammer

"Children need a robust foundation in oral language and early literacy skills to become strong readers. Understanding differences in oral language and early literacy trajectories during early elementary school is crucial for supporting reading outcomes in diverse learners. It is particularly important to understand bilingual development, as the population of dual language learners (DLL) in the United States continues to grow. This study focuses on Spanish-English DLLs, who constitute the majority of school-age DLLs in the United States.

Academic expectations for oral language and early literacy development in DLLs are based on research suggesting that children can establish academic proficiency after five years of schooling in English (Cummins, 1981). However, DLLs' time to academic proficiency may vary depending on their timing of exposure to English (Hammer et al., 2008) and the language of instruction (e.g., heritage language, majority language).

This study investigated differences in the time to Spanish and English academic proficiency between DLLs who were sequential language learners (SEL) and those who were simultaneous language learners (SIL). Spanish and English oral language and early literacy trajectories during kindergarten through second grade were examined in 83 children who had attended two years of English-only preschool and elementary school. By the end of second grade, differences between SEL and SIL groups were maintained in oral language skills but diminished in early literacy skills. In English, both groups approximated academic proficiency in early literacy skills, but only children in the SIL group reached academic oral language proficiency. Children in both groups demonstrated a decline in Spanish oral language and early literacy skills. Findings provide new insights on variability in DLLs' time to academic proficiency. Implications for reading development and academic instruction will be discussed."

Age of Arrival and Input Factors Modulate Arabic Heritage Language Maintenance in Child Refugees

Authors: Johanne Paradis; Adriana Soto-Corominas, Evangelia Daskalaki, Redab Al Janaideh, Xi Chen, Alexandra Gottardo

"Most studies on heritage language/HL development are cross-sectional and include second-generation children. By contrast, the recent resettlement of 44,620 Syrian refugees in Canada offered the opportunity to examine - in vivo - HL maintenance/attrition in first-generation children who vary in age of arrival/AOA, but all began acquiring the societal language/SL at the same time. It is possible that first-generation children, especially older arrivals, might have different profiles of HL maintenance/attrition and dominance shift to the SL than second-generation children. Accordingly, we examined Arabic-English lexical and morphosyntactic development in children during their first 4.5 years in Canada to address the following questions: (1) Is dominant language shift taking place during this time and is it modulated by AOA? (2) How do AOA and HL input factors (concurrent and longitudinal) predict individual differences in the HL after 4.5 years?

Data collection took place at three time periods (T1-T3). At T1, 133 children (mean age = 9;5(2;0); mean AOA = 7;7) participated from three Canadian cities. Children were administered sentence repetition and receptive vocabulary tasks in English and Arabic, and information about AOA and language input and experience was obtained via parent report. Linear modelling revealed that, across time periods, older AOA children had superior Arabic vocabulary and morphosyntax than younger AOA children, but growth in English was stronger than in Arabic for both. The younger AOA children showed a shift to English dominance for morphosyntax by T3. Concurrent and longitudinal modelling revealed that speaking more Arabic with friends, having more Arabic schooling pre-migration, and engaging in language-rich activities in Arabic contributed positively to HL proficiency at T3; using more English with siblings was a negative contributor. We conclude that the HL is vulnerable even in first-generation migrant children, but older AOA and quantity and quality of HL input can boost HL maintenance."

Symposium: TALK (Tackling Acquisition of Language in Kids): a focused US NIH initiative on late talkers

Speakers: Bonnie Lau; Helen Tager-Flusberg; Nan Bernstein Ratner; Laura Justice; Mary Alt

Five research teams report on outcomes of research funded by a US NIH focused initiative to understand late talking: its roots, outcomes and effective interventions.

Early brain and behavioral predictors of late language emergence

Authors: Bonnie Lau;

There is converging evidence that starting intervention programs earlier, such as in the first year of life, leads to more optimal language and learning outcomes. However, the identification of infants at higher likelihood of language delay that would benefit from intervention remains challenging. Current language screening tools are often administered between 18 to 24 months of age, or even later. In this project, we obtain brain measures of speech, music, and binaural stimuli using magneto-/electroencephalography in combination with a behavioral assay of cross-domain development including language abilities, auditory skills, vocabulary, and adaptive behaviors at 3-, 6-, and 11-months in infants with and without hearing loss. As part of the NIH TALK supplement, these children will return to the laboratory for an additional 30-month visit or 5-year-old visit which includes a standardized language assessment, a natural language sample, measures of intellectual ability, in addition to parent-report measures of early language, adaptive behaviors, and language experience – to identify the late talkers in our sample. As we have longitudinal brain measures in combination with a clinical battery including both parent-report and direct assessments administered in the laboratory, we are able to compare objective brain measures to clinically relevant language measures longitudinally from as young as 3 months of age. We hypothesize that as language development is complex, effective infant language screening will require a combination of brain and behavioral measures interpreted in the context of demographic and social determinant of health variables. This presentation will summarize the preliminary findings from this project.

Exploring predictors of late talking in a diverse, low-resource population-based urban sample

Authors: Helen Tager-Flusberg; Charles A. Nelson

"Using a prospective study design in a racially, ethnically, and socioeconomically diverse primary care population, we will identify the EEG features measured during the first year of life at 4, 9 and 12 months that are associated with late talkers identified at 12, 18 or 24 months. Building on our past work we will explore several cross-sectional and longitudinal approaches to analyzing EEG data including a) data-driven model selection using EEG power spectra; and b) complex signal processing of nonlinear EEG measures.

We are currently carrying out a large-scale (projected N=720) longitudinal study of infants enrolled in early infancy exploring neural (resting EEG markers), behavioral, demographic, and environmental factors that predict autism and related neurodevelopmental outcomes. Our participants are recruited from a clinic at an urban hospital serving a racially, ethnically, and socioeconomically diverse primary care population. At 4, 9 and 12 months of age a five-minute resting EEG sample is collected in the clinic while the children sit on their parents' lap watching a screen-saver. Additional measures collected at each time point (in English or Spanish) include behavioral development (ASQ-3), demographic information, prenatal, perinatal and medical history (both child and mother), maternal depression, perceived stress, knowledge of child development and life events. The CSBS at 12 months, and the MCDI at 18 and 24 months are used to identify late-talking children (lowest 20%) and parent-child interactions collected at 24 and 30 months provide rich information about the children's expressive language and parental input. To date, over 250 infants have been enrolled in the study. We will present preliminary data on EEG features (e.g., periodic and aperiodic power) and demographic/environmental

factors that are associated with late talking and discuss plans for future explorations of this unique dataset."

Using phonology and conversational turn taking profiles to predict outcomes of late talking

Authors: Nan Bernstein Ratner; Carly Rosvold, Brian MacWhinney

"An enduring challenge is predicting which LTs will basically "catch up" to their peers (~ two-thirds or more), while others continue to demonstrate lags in language skill development. This project takes two related phenomena (child phonological skill) and parental response to communicative gambits (e.g., recasting, requesting clarification) to assess whether they can differentiate outcomes in two large longitudinal corpora

which tracked families from 2-6 years of age (total N=86 LT, as well as a comparison corpus of age- and sex-matched TD peers).

In our first hypothesis, we propose that some children's basic limitation in achieving early language milestones may reflect phonological immaturity, rather than underlying deficits in word learning or grammatical development; such children are more likely to catch up once they attain more intelligible speech. To evaluate this hypothesis, we are exhaustively evaluating phonological profiles (using PHON to code for accuracy, inventories, phonological processes) of the late-talking children engaged in conversational play with parents.

Further, we believe that individual differences in parental efforts to recast or elaborate child language efforts, together with individual child responses to such efforts, may partially explain differential outcomes in cohorts of late talking children. To this end, we are concurrently examining parental responses to child turn attempts, including recasting and expansion behaviors, and requests for child clarification. We also believe that some children are more attentive to such adult behaviors than others and predict that child re-attempts may be predictive of stronger language profiles at later time points. Results of both analytical aims will be presented at the meeting in July."

Testing the Family Stress Model for Modeling the Relations between Early Childhood Poverty and LLE

Authors: Laura Justice; Hui Jiang, Britt Singletary

"Heightened susceptibility of children in poverty for developmental language disorder (DLD) suggests that ecological factors likely contribute to DLD (Norbury et al., 2016). However, there is limited understanding of the mechanisms through which poverty may disrupt early language development and lead to DLD.

The Family Stress Model presents an overarching model for detailing how, in low-income families, economic hardship leads to economic pressure, which in turn contributes to inter-relationship conflict, disrupting parenting, and parental distress in the family unit. These serve as the pathway through which poverty negatively affects child and youth outcomes.

In this study, part of the larger NIH-supported Small Talk project, we evaluate the applicability of the Family Stress Model for understanding how poverty may disrupt early language trajectories and contribute to late language emergence (LLE; AKA late talking) for children born into poor homes. For the present work, 353 mothers (all low-income) and 6-month-old children participated in data-collection sessions every 3 to 6 months to the present (underway). Measures of the home context were collected at time-point 1 to represent the contextual aspects of the Family Stress Model: economic hardship, economic pressure, inter-relationship conflict, disrupted parenting, and parental distress. Measures of child language skill were captured every six months.

Analyses are underway in advance of the conference. We shall present findings pursuant to three specific aims utilizing the time-point 1 and 2 data: (1) to identify the prevalence of LLE and the theorized domains in the Family Stress Model that differentiate children with LLE from those without LLE; (2) to examine early language trajectories from ~6 months to ~27 months for those with LLE and those without LLE; and (3) to identify the pathways through which the ecology of poverty disrupts early language trajectories and contributes to LLE."

Describing the Skills and Lived Experiences of Late Talkers Following Toddlerhood

Authors: Mary Alt;

"Our team has provided vocabulary intervention to more than 60 late-talking toddlers, determining which treatment parameters lead to the best outcomes. However, our outcomes currently only extend to 4-6 weeks post treatment-and focus solely on vocabulary. We will follow up with children who will range in age from 30-months to 9-years of age, based on when they initially participated in our treatment protocol. These children will all be verified as having been late talkers.

We plan share the follow-up data we collect from the children who completed the Vocabulary Acquisition and Usage for Late Talkers (VAULT) treatment protocol to determine: (1) How many children continue to show signs of risk/impairment in language, speech, phonological awareness/reading, cognitive skills, or educational performance and (2) If there are early indicators (e.g., demographic information, response to treatment, SES) that predict later outcomes.

We will also collect qualitative data from families of late talkers and former late talkers themselves to better understand the functional and social effects of late talking and to understand the lived experience of being a late talker. We will work with families to co-create the interview protocol, and involve families in member checking,

to ensure that the themes that emerge from our interviews accurately represent their points of view. For the children's interviews, we will modify McCormack et al.'s (2022) Drawing Talking protocol, as an age-appropriate manner to elicit information.

Our qualitative data will add unique information to the literature about late talkers. In addition to understanding how late talking affects family dynamics, children's lived experiences, and how families perceive their children's communication, academic, and social skills, we will be able to shed light on families' impressions of treatment, their goals for their children, and their views and experiences on the supports available to them."

07/18/2024, from 11:30 AM to 01:30 PM , Room P018

Symposium: Language acquisition in children who are deaf or hard of hearing from preschool to adolescence

Speakers: Elizabeth Walker Walker; Elizabeth Walker; Krystal Werfel; Elizabeth Heinrichs-Graham; Ryan McCreery; Tina Grieco-Calub

This symposium presents research from studies focusing on speech perception and language development in children who are deaf or hard of hearing compared to hearing peers, as well as the underlying processes that drive these trajectories. We will als

Growth Trajectories in Vocabulary Depth and Breadth for Adolescents with Hearing Loss

Authors: Elizabeth Walker; Jacob J. Oleson, Ryan W. McCreery

Children with hearing loss (CHL) show vocabulary delays relative to typical-hearing peers, which can lead to cascading negative effects in reading achievement. Prior research on vocabulary knowledge in CHL has focused primarily on their breadth of knowledge (how many words one knows). While the breadth of one's receptive vocabulary is important to measure, it does not fully capture their knowledge of their lexicon. Therefore, it is important to also assess vocabulary depth (how much one knows about a word). The primary aim of the current presentation is to examine trajectories of vocabulary breadth and depth from age 7 to age 18 years in CHL (n = 114) and age-matched children with typical hearing (n = 58). A secondary aim is to determine the factors that influence variation in vocabulary breadth and depth for CHL. We used a linear mixed model to test for group differences while accounting for age and correlated observations. Group, age, and a group by age interaction were fixed effects, with a random intercept to account for within subject correlation. Preliminary results suggest that children with typical hearing had significantly higher scores for vocabulary breadth compared to CHL at younger ages, but the effect size diminished over time. In contrast, differences between groups in vocabulary depth remained constant with age out to age 9. These results suggest that CHL face persistent deficits in their depth of vocabulary knowledge. Given the emerging research on the importance of both vocabulary breadth and depth on reading comprehension, these data suggest that the focus of vocabulary intervention may need to shift from quantity to quality.

Spoken Language Morphosyntax by Children who are Deaf or Hard of Hearing Across the Preschool Years

Authors: Krystal Werfel; Emily A. Lund, Lisa Fitton

The purpose of this presentation is to describe morphosyntax development in children who are deaf or hard of hearing (DHH) over the preschool years. Recently, we reported that children who are DHH and use spoken language lag behind their peers with typical hearing on performance on an elicited morphosyntax task throughout preschool (Werfel et al., 2022). In this presentation, we will extend this finding and report on longitudinal morphosyntax acquisition measured via naturalistic language samples as well as elicited tasks for children who are DHH (n = 100) and children with typical hearing (n = 70). All children primarily use spoken English. Children participated in a 12-minute language sample following the Hadley (1998) protocol, as well as completed the Test of Early Grammatical Impairment (Rice & Wexler, 2001), which contains two subtests that elicit production of (a) third person singular markers and (b) regular and irregular past tense markers. Each child was assessed initially at age 4 and then at 6-month intervals until they turned 6. Preliminary findings indicate that children make gains in morphosyntax production across the preschool years in elicited as well as naturalistic language tasks. For elicited tasks, an interaction of group and time is observed, such that children with typical hearing display ceiling effects while children who are DHH continue to exhibit growth. This interaction is not observed for language sample variables; all groups exhibit growth but children who are DHH consistently lag behind children with typical hearing across all language sample morphosyntax variables. Additionally, for children who are DHH, morphosyntax performance at age 5;0 accounts for 60% of the variance in performance on an omnibus norm-referenced measure of spoken language at age 6;0. Elicited and

naturalistic tasks contribute similar unique variance. Theoretical implications of morphosyntax acquisition in children who are DHH will be discussed.

Uncovering the Brain Dynamics Serving Grammaticality Judgement in Children who are Hard of Hearing

Authors: Elizabeth Heinrichs-Graham;

Children who are hard-of-hearing (CHH) are at a heightened risk of a myriad of language delays through development. Among the most prominent delays is that of grammar processing. Moreover, grammar ability has been shown to mediate relationships between hearing status and narrative storytelling, reading, and other important developmental language milestones. Unfortunately, it is unclear what the underlying mechanisms that lead to these alterations in grammar ability in CHH are, which makes therapeutic decision-making more difficult for these youth. This study sought to determine the effects of age and hearing status on the neural dynamics of grammaticality judgement in a large cohort of children aged 7-15 years old with normal hearing, as well as a matched cohort of children who are hard-of-hearing. Magnetoencephalographic (MEG) data was collected while participants performed a grammaticality judgement task, where they listened to a 6-7 syllable sentence and were instructed to determine whether the last (target) word was grammatically correct. Artifact-free trials were decomposed into the time-frequency domain, significant spectro-temporal neural responses were imaged using beamforming, and these images were subject to whole-brain statistical analysis. We found significant age-related increases in beta desynchronous activity throughout the left language network, including inferior frontal, superior temporal, and parietal regions, as well as the anterior cingulate and left dorsolateral prefrontal cortex. We also found significant age-by-hearing status interactions in the beta band within this language network, such that these age-related increases were diminished in CHH. Neural dynamics correlated with behavioral performance. These data provide new neurophysiological evidence of altered grammar processing in CHH through development and may hold promise in guiding individualized therapeutic approaches in the future.

Effects of language and executive function on speech recognition in children with hearing loss

Authors: Ryan McCreery;

Children with mild to severe hearing loss exhibit delays in speech recognition compared to peers with typical hearing levels, even when auditory access is improved with hearing aids. These persistent deficits are even greater in degraded conditions, which creates challenges for listening and learning in everyday conditions like classrooms. Development of speech recognition in degraded conditions is thought to be supported by parallel maturation of language and cognitive abilities, but previous cross-sectional analyses showed varied patterns of association between speech recognition, language abilities, and executive function. We analyzed longitudinal development of speech recognition in a large cohort (n=125) of children with mild to severe hearing loss between 18 months-old and 9 years-old and a group of children with typical hearing matched for age, socioeconomic status and nonverbal intelligence. Early word recognition was associated with receptive vocabulary. Word and sentence recognition in noise at school age was associated with vocabulary and working memory skills, as well as factors related to cumulative auditory experience. These results suggest that the relationships between speech recognition and language and cognitive skill depend on the child's age and complexity of the speech recognition task. These results have implications for clinical assessment of speech recognition in children with mild to severe hearing loss who use hearing aids.

Using gated word recognition to test the effect of visual speech cues on lexical access

Authors: Tina Grieco-Calub;

Listeners process words incrementally to facilitate lexical access and speed of understanding. Children who are deaf and who use cochlear implants (CIs) have altered auditory and linguistic experience early in life and are typically slower at processing speech in real time. This may be due, in part, to disrupted access to the acoustics of speech related to their hearing loss or technical limitations of their hearing devices. The purpose of this presentation is to discuss the extent to which visual speech cues (i.e., lipreading) facilitate word recognition in children when speech is degraded. Forty-seven children between ages 6 and 10 years who used CIs (n = 14) or who have typical hearing ability (TH, n=33) participated in a gated word recognition task. In this task, children are presented with partial phonological information of target words and asked to verbally produce the identity of the word. Children are provided with additional "gates" of phonological content of the target word on subsequent trials. Children are assigned to a condition where speech stimuli have high acoustic fidelity (HF) or are spectrally degraded by an 8-channel noiseband vocoder (D). Within a condition, stimuli are presented in an auditory-only or audiovisual modality. Performance is quantified by proportion correct per gate (1-5), modality (auditory-only, audiovisual), and group (CI-HF, TH-HF, TH-D). Preliminary results suggest that CI-C and TH-D groups have reduced performance compared to the TH-HF group in the auditory-only modality across all

gates. Additionally, visual speech cues improve performance in the CI-C and TH-D groups. These data support the idea that although speech degradation disrupts incremental speech processing, children can utilize visual speech cues to promote lexical access in these situations. The discussion will include implications for future research and clinical practice.

Symposium: Links between language and cognitive development: insights from childhood deafness

Speakers: Gary Morgan; Judit Gervain; Claire monroy; Mario Figuroa; Laura Bosch; Beatriz de Diego-Lázaro

How does wider cognitive development influence language. This symposium addresses this question with studies of children born deaf

Rhythmic discrimination of languages in deaf infants

Authors: Judit Gervain; Gaia Lucarini, Caroline Nallet, Davide Brotto, Alessandro Martini, Patrizia Trevis

"At birth, hearing newborns show sensitivity to the prosody, i.e. melody and rhythm, of their native language, i.e. the language they heard prenatally (Peña et al., 2003, May et al., 2018). For instance, they can discriminate rhythmically different languages (Ramus et al. 2000) and show a heightened, left-lateralized brain response to the language heard prenatally (Peña et al. 2003). A current hypothesis (Gervain, 2018; Nallet & Gervain, 2021) suggests that this prenatally heard prosody provides the basis of early speech perception and helps infants discover other linguistic units after birth, when the full-spectrum speech signal is available. Prenatal experience is thus hypothesized to be relevant for language learning. But what happens when prenatal experience is different?

To investigate this, we are testing the ability of 0-10-month-old deaf infants (DI) with varying hearing thresholds (40-90dB) to discriminate their native language (Italian) from a rhythmically different unfamiliar language (English). Sentences in both languages are presented forward and backward. Backward speech, with perturbed temporal features, is a standardly used non-linguistic control (Peña et al., 2003). A group of age-matched normal hearing (NH) infants is also tested. Infants' brain responses are recorded using functional near-infrared spectroscopy (fNIRS) recorded in twenty channels covering the frontal, temporal and parietal regions, bilaterally.

Data collection in deaf and hearing infants (n=20 D, n=20 H). Results suggest that both deaf and hearing infants respond differentially to Italian and English, although the exact pattern of responses is different. If confirmed, these results suggest that some basic, broad acoustic features of language are perceived, even prenatally, by deaf infants with varying levels of auditory thresholds, with a possible contribution from vibrotactile experience. Such abilities need to be considered in the language acquisition process and may be built on during the developmental path of deaf children."

Cognitive markers in deaf infants and associations with language

Authors: Claire monroy; Derek Houston

"Children with hearing loss demonstrate atypical performance across many general cognitive skills, such as visual working memory and visual statistical learning. However, the evidence for these deficits has been challenged, with mixed findings emerging in recent years, and is limited to studies involving school-age children. In our work we are investigating cognitive skills in young babies, and associations with later language, to investigate the effects of hearing loss on cognition early in development. In two studies, we compared visual habituation (study 1) and visual statistical learning (VSL; study 2) between deaf and hearing babies.

Study 1 implemented a visual habituation-oddity paradigm to deaf and hearing infants. Study 2 used mobile eye-tracking to compare VSL between groups of deaf and hearing infants, prior to cochlear implantation (pre-CI), and toddlers 12 months post-implantation (post-CI). Study 1 revealed that deaf infants were slower to habituate to a visual stimulus than hearing infants. For deaf pre-CI infants, habituation measures correlated with language scores on a standardized assessment. Study 2 similarly revealed a significant difference between deaf pre-CI vs. hearing infants, with evidence for learning only in the hearing infants. However, there were no differences between deaf vs. hearing toddlers post-CI, with both groups demonstrating learning. VSL performance was also positively correlated with language scores for the deaf toddlers. These findings provide the first evidence that differences in essential cognitive abilities between deaf and hearing children emerge in infancy. They also suggest that cognitive differences between deaf and hearing infants can explain some of the variability in the neurocognitive, social, and language outcomes in children with hearing loss. We will discuss the potential mechanisms that drive the effects of hearing loss on general cognitive development and offer some ideas for future experiments that could shed light on these mechanisms."

Social cognition in processing overheard communication: A comparison of deaf and hearing toddlers.

Authors: Mario Figuroa; Gary Morgan

"The early years of life are considered a critical period for the development of theory of mind (ToM). The foundations of this construct can be acquired through direct communication, where the child consciously seeks interaction from an adult interlocutor. Input to early ToM can also come from overhearing/seeing the conversations of others. This avenue for receiving ToM input is more difficult to process for deaf infants. This study will investigate how deaf children use their social-cognitive skills in order to understand intentions in situations which require overhearing.

Fifty-one toddlers with and without deafness participated in this study (deaf N=26, hearing N=25). Participants ranged in age from 10 - 40 months. Deaf toddlers wore hearing aids or cochlear implants and were exposed to a spoken language. All of them were evaluated with a social-cognition task adapted from Behne et al. (2005) with 4 incrementally difficult conditions. In the non-verbal conditions, an experimenter addressed an assistant and indicated the whereabouts of a hidden toy's location by (1) pointing or (2) gazing ostensively. In the case of the verbal conditions, the experimenter indicated the location by (3) uttering a verbal interjection or (4) having a conversation which that included the spoken deictic ´there´. The results showed that deaf toddlers understood the intentions of others when they were expressed through pointing and less so by gaze. They did not process overheard verbal intentions. Hearing children showed an understanding of both non-verbal and partly the verbal conditions. The present study thus shows that deaf toddlers are able to monitor and comprehend some aspects of third-party interactions in order to process early aspects of ToM but these are delayed compared with normally hearing peers."

Fast mapping skills in congenitally deaf children two years after implantation

Authors: Laura Bosch;

"Fast mapping, the ability to establish a rapid audio-visual label-referent association from minimal exposure, is connected to word learning and can enhance lexical growth around 2 years of age. For congenitally deaf infants, late access to auditory information can hinder the deployment of fast mapping skills, overall constraining progress in lexical learning. Although early implanted deaf children seem to catch up with their normal-hearing peers, variability is high and successful learning post-implantation remains difficult to predict. Here, fast mapping data from a behavioral task, involving 4 novel words, was obtained in two groups of participants at age 2 years (chronological age and age after implant activation, for n=24 normal hearing -NH-, and n=22 implanted children -CI-, respectively). Cognitive and language development measures (BSID-III), and expressive language levels (MacArthur CDI), were obtained.

After a training trial, the task involved a referent selection phase, followed by two recall phases, immediate and delayed recall. Each phase included 8 trials, always presenting 3 objects, 2 novel and 1 familiar in both recall phases. Each novel object was requested twice. This multiple label-object task is demanding at age 2 years and suitable to explore variability in performance. Although a lower performance could be expected in the CI group, older (chronological) age at test and normal cognitive capacity would lead to a more similar between-group performance."

Executive Function and Language in Children who are Deaf or Hard of Hearing

Authors: Beatriz de Diego-Lázaro;

"Auditory and linguistic deprivation have a widespread impact on language and executive function (EF) abilities in children. While this has been extensively shown in children who are deaf, it is unclear whether children who are hard of hearing (HH) show EF difficulties and what factors are related to EF in children who are deaf or hard of hearing (DHH). The purpose of this study was to (1) assess differences in EF in children who were DHH and (2) identify auditory and linguistic factors related to EF in this group. Twenty-six children with normal hearing (NH), 15 children who were deaf, and 16 children who were HH between 4 and 8 years completed hearing, vocabulary, word learning, and direct and reported EF measures. Children completed the Color Stroop subtest from the Leiter Scale and caregivers completed the Behavior Rating Inventory of Executive Function (BRIEF).

ANCOVAs controlling for age showed a significant main effect of hearing group (NH, HH, and deaf) on selective attention measured by the Color Stroop (F [2,53] = 3.15, p <.05). Children who were deaf (p = .03) and HH (p = .04) showed poorer selective attention than children with NH, but they did not differ from each other (p = .90). We did not observe any significant differences by hearing group in the reported EF (BRIEF). Correlations revealed that age at first expressive word, speech perception, vocabulary, and word learning correlated positively with direct and reported EF measures in children who were DHH. We observed minimal correlations between direct and reported EF measures. Both children who were deaf and HH showed EF

difficulties compared to NH peers, suggesting that even partial auditory and linguistic deprivation might impact EF abilities. Hearing and language abilities contribute to enhanced EF in children who are DHH."

Symposium: Expanding Diversity in Language Development Research through the Acquisition Sketch Project

Speakers: Rebecca Defina; abdellah Elouatiq; Dorjderem Byambasuren; Lucy Davidson; Birgit Hellwig

"The field of child language acquisition has a proud history of crosslinguistic research, highlighting the importance of taking into account the many ways that languages vary when building theoretical models of the acquisition process. However, Kidd and Garcia (2022) recently reported that while research on less-commonly studied languages is increasing, our evidential base is still severely skewed: we only had papers on around 103 of the world's current 7,000 languages published in the last 40 years in the four main journals in the field. Over the last few years, we have developed a model of data collection that aims at rapidly increasing language coverage in the field, with an eye to also giving back to communities that contribute data: the Acquisition Sketch Project. Drawing inspiration from the field of language documentation, we propose that researchers write an "acquisition sketch" based on a minimum of 5 hours of naturalistic data from children aged 2 - 4 years. A sketch is a broad overview of properties of the input and children's productions, covering core topics in acquisition. The presentations in this symposium highlight work across different language groups and topics, following the guidelines of the Sketch Acquisition Manual. Each talk highlights one topic of particular interest within one language. The symposium thus presents a showcase of research in underdescribed languages: featuring five unrelated languages from Australia, Mongolia, Morocco, and Papua New Guinea with topics including child and child-directed language, phonology, lexicon, and morphology, as well as feedback signaling and gesture. The aim is to illustrate the potential of the sketch format by demonstrating its application in a variety of contexts."

IASCL 2024 Symposia: Thursday Afternoon

07/18/2024, from 02:30 PM to 04:30 PM , Room P429

Symposium: Nonword Repetition – The role of administration criteria and nonword characteristics

Speakers: Maren Eikerling; Anna-Lena Scherger; Maria Luisa Lorusso; Juliane Hinnerichs; Kathrin Heeg

Nonword repetition tasks (NWRT) are widespread in child language assessment. Tests vary in nonword characteristics and administration criteria. Their influence on children's repetition performance is high-lighted and discussed within the symposium.

Nonword repetition in bilingual German children by age 4 to 8

Authors: Anna-Lena Scherger; Angela Grimm

"Nonword repetition tasks vary with respect to the nature of nonwords, the focus on linguistic phenom-ena or working memory and the language-specificity. The present talk presents a nonword repetition task that has been developed within the COST Action IS0408 (2009-2013) and has been further adapted and evaluated since: the LITMUS quasi universal nonword repetition task (LITMUS-QU-NWRT) by Grimm (2022).

In the development of the LITMUS-QU-NWRT, the focus was placed on a bilingualism-sensitive con-struction of the items in the way that typologically well-attested vowels and consonants were used. Further, the task aims to tap into children's phonological knowledge rather than to rely on multisyllablic nonwords that measure working memory load. Therefore, only nonwords with one to three syllables are included. The task consists of a language-dependent and a language-independent part and is prere-corded in a set of powerpoint slides in order to control for speech rate and word stress.

In the present talk, we will present data of several hundred children within the age range between 4 and 8 years of age that has been collected in various research projects. We will highlight data from children with very low exposure to German (>12 months; N = 85) where results show amongst others difficulties with consonant clusters. Further, we will present the state of the art of a research project running from 2023-2026 which aims at collecting norms for the LITMUS-QU-NWRT for children growing up with more than one language in their input.

Results will be discussed with respect to the validity of this tool for assessing children with DLD in a bilingual population and will address strengths and limitations."

Influence of nonword characteristics as rated by adults on bilingual children's repetition

Authors: Maria Luisa Lorusso; Maren Eikerling; Maria Luisa Lorusso

"Nonword repetition tasks are considered to be a suitable clinical marker for Developmental Language Disorders (DLD), both in mono- and multilingual children. However, the characteristics concerning pro-nounceability and language-specificity of nonwords seem to play a major role for children's repetition performance. Thus, specific linguistic characteristics of nonwords should be taken into account in the construction, administration and scoring of such tasks. Moreover, the interaction of such effects with the degree of exposure to the language of assessment should be considered, to avoid penalizing chil-dren with little exposure.

To this end, we first identified the pronounceability and language specificity (i.e., language allocation) of a collection of nonwords, based on the online ratings of 68 adult native speakers of the two lan-guages. A selection of German- and Italian-language-specific as well as language-non-specific non-words yielding the best ratings according to pre-specified parameters and cut-offs was administered to 28 Italian-speaking children attending kindergarten in Germany using an automated screening platform. Some of the children were typically developing, whereas others had a diagnosis or suspect of DLD.

The results indicate that language specificity has different effects depending on DLD risk status. It is further shown that language-specific stimuli appear to be particularly sensitive indicators, possibly due to reduced sensitivity to frequent, familiar characteristics of the linguistic stimuli in children with DLD. The findings further confirm the role of language specificity (in terms of target language alikeness) but also of other characteristics related to word structure complexity. Furthermore, the study shows that it is possible to administer pre-recorded language-specific nonwords of a heritage language in an auto-mated way and to have

the children repeat them, which simplifies the application of repetition tasks with language-specific nonwords in different languages."

Using the LITMUS-CL-NWRT in Germany to differentiate between bilingual children with and with-out DL

Authors: Juliane Hinnerichs;

"Many German SLTs use Nonword Repetition Tasks (NWRT) to measure phonological short-term memory (Eikerling et al. 2023). The often-highlighted benefit of this task is that the items are less de-pendent on a specific language than real words – making it a promising tool for the diagnosis of De-velomental Language Disorders (DLD) in bilingual children.

However, it is impossible to construct nonwords which are equally compatible with all the worlds' lan-guages. Within an international research network the LITMUS-CL-NWRT (Language Impairment Testing in Multilingual Settings - Crosslinguistic NWRT; bi-sli.org) was designed in order to minimize language specific features with the aim of creating a universally applicable task (Chiat 2015).

The LITMUS-CL-NWRT was conducted with 100 children divided into four groups (BiliSAT-Project: Chil-la/Hamann DFG CH-1112/4-1). Two groups with monolingual and bilingual typically developing children and correspondingly two groups with DLD. The main research questions were:

Is the LITMUS-CL-NWRT a suitable tool to differentiate between children with and without DLD, with-out disadvantaging bilingual children?

Does the LITMUS-CL-NWRT show better values of diagnostic validity compared to an already well-established German NWRT?

The outcome shows better diagnostic validity for the LITMUS-CL-NWRT compared to the German NWRT. This is in line with the findings of other NWRT studies that crosslinguistically constructed items are more appropriate to test bilingual children on DLD (Ortiz 2021). Further analyses of the data show that the results are also influenced by the language profile of children with DLD. This finding should be kept in mind for future NWRT studies as it may shed light on the role phonological short-term memory plays as an underlying cause for DLD."

Factors of item presentation influencing children's performance in nonword repetition tasks

Authors: Kathrin Heeg; Nathalie Frey, Theresa Bloder, Maren Eikerling, Anja Starke, Carina Lüke

"Nonword repetition tasks (NWRT) help to identify children with developmental language disorders (DLD). For these tasks several factors, e.g., structure of nonwords, have been examined to determine their potential impact on children's performance. However, only a limited amount of discussion has been focusing on the way the items are presented to the children. Given that NWRT often lack a stand-ardized administration, it is relevant to consider how certain presentation aspects might affect the in-terpretation of test results. We therefore investigated the influence of pace (slow vs. fast) and mode (prerecorded vs. life) on children's performance in a common German NWRT.

For both conditions the test was employed in an AB-BA design. Pace: We presented the children (n = 42, 13% multilingual, M = 6;2 years, SD = 9.09 months) with prerecorded audio items, half of them at a rate of one syllables ("slow") the other half with two syllables ("fast") per second. Mode: The items for this group (n = 54 children, 46% multilingual, M = 5;5 years, SD = 6.88 months) were partly presented live by the examiner, while the other half was presented using prerecorded audios.

Our results show that items presented at a faster rate yielded in more nonwords being repeated cor-rectly in comparison to the slower presentation (M = 2.52, t(41) = 8.12, p < .001, d = .833). Likewise, children showed better results for the items that were presented live compared to the prerecorded items (M = -1.741, t(53) = -4.813, p < .001, d = .688).

Disparities in the presentation impact both children's performance in repeating them and the diagnostic outcomes. In order to attain valid results, it is imperative to work towards establishing consistent in-structions for NWRT administration."

Symposium: Language acquisition in Indigenous North and Central American contexts

Speakers: Henny Yeung; Martina Joe; Pedro Mateo Pedro; Melvatha Chee; Shanley Allen; Titia Benders

Here we explore how children acquire a variety of linguistic levels (phonology, morphology, syntax) in the languages of several Indigenous communities in North and Central America (Canada, US, and Guatemala).

Child pronunciation in a language revitalization context: Evidence from Hul'q'umi'num'

Authors: Martina Joe; Boey Kwan, Elise McClay, Henny Yeung, Sonya Bird

Hul'q'umi'num' is an Indigenous language spoken on southeastern Vancouver Island (British Columbia, Canada). Through intense grassroots activism, many communities have a remarkable increase in the number of young children learning Hul'q'umi'num' through early home- and school-based language programs. Hul'q'umi'num' has a rich consonant inventory, including many place and manner contrasts not used in English, as well as complex consonant clusters, and children most commonly learn Hul'q'umi'num' from their teachers and parents, who are themselves adult L2 speakers. In our research, we ask at what point children master specific sounds, and how L2 adult input affects children's pronunciation of these sounds. As community- and university-based linguists, including an adult learner of Hul'q'umi'num' who is a parent of young children enrolled in this language programming, we have been examining children's recitations of word and phrase lists that are representative of the language's sound system. In our talk, we present an overview of a corpus of 173 transcribed words from 8 children, and we track the acquisition of individual consonants based on children's age and adult input patterns. Results show that (1) the more often children hear a particular sound, the more often they faithfully reproduce it, (2) consonants present in both English and Hul'q'umi'num' are more easily produced at earlier ages, whereas consonants unique to Hul'q'umi'num' are produced more accurately at older ages, and (3) some select non-English sounds are nevertheless produced accurately from an early age (e.g., uvular /q/). These patterns are beginning to build a full picture of the developmental pathway of pronunciation acquisition among young Hul'q'umi'num'-learning children. Our research furthers our understanding of phonological acquisition in languages with more complex consonant inventories than those currently well-studied in the literature. Results will also provide benchmarks that can be used by parents, teachers, and clinicians in supporting Hul'q'umi'num' speaking children.

Acquiring ejectives in L1 and L2 learners of Mayan languages

Authors: Pedro Mateo Pedro;

In this presentation I will provide an overview of child and L2 acquisition of Mayan languages and focus specifically on the acquisition of ejectives and related patterns of sound substitution, with special focus on Q'anjob'al and Chuj. Based on studies of child data from naturalistic settings, which consisted of a child's interactions with relatives from home and with research assistants, children's production of ejectives often results in either the production of a plain or the glottal stop. Additionally, when children are acquiring the sound system of a Mayan language, they undergo a process of substitution. For example, instead of producing a retroflex as in the word [ṭʂitam] 'pig', they would produce an affricate as in [t͡ʃitam]. I ask here how this data can predict L2 learner performance in a context of language revitalization, and whether this resembles what is reported in first language acquisition. For this section of the talk, I will discuss original data from the revitalization project of Itzaj in Guatemala that involves adults and teenagers who are L2 learners of this language. The prediction would be that L2 learners of Itzaj will undergo a similar pattern of sound reduction and the modified production of ejectives as observed in other studies of L1 child language acquisition in other Mayan languages.

Learning to navigate the Navajo verbal prefix system

Authors: Melvatha Chee;

Navajo has a verb-based lexicon. The polysynthetic Navajo verb construction is morphologically rich, often compared to an entire English predicate. It expresses verbal semantics plus agreement, argument structure, and adverbial information. The Navajo verb construction comprises a concatenation of lexical and inflectional morphemes, all of which are bound. Their individual meanings are dependent on the verb construction as a whole. While the verb structure is notoriously complex in all polysynthetic languages, identifying the specific morphemes in the Navajo verb is particularly difficult due to morphophonological interactions that blur morpheme boundaries. Data for this study was collected from four Navajo speaking children in the form of audio recorded child-caretaker conversations. From this data, 1600 verb tokens, 400 per child ranging in age

from 4;07 to 11;02, were analyzed. This talk focuses on the acquisition of agreement and mode making in the verb construction to answer the question how do children learn the elements that compose the base verbal prefix string? The analysis of child-produced Navajo verbs, specifically verbal prefixes, shows that children first focus their attention on adding semantically salient verbal prefixes. Although all verbal prefixes have semantic content, children especially pay attention to those that have a one-to-one form-meaning pair. Verbal prefixes that children pay less attention to and therefore do not use as much are homophonous prefixes. Homophonous prefixes present a challenge because they cannot be easily distinguished due to a single form containing numerous meanings. The meaning of homophonous prefixes tends to come out when they are used with neighboring prefixes, usually resulting in syllables. Navajo children must learn to navigate this verbal prefix system to begin to produce adult-like verb constructions. Findings will contribute to the study of child language development and to the revitalization of Navajo where a shift to English is prevalent.

Early development of morphological and syntactic structure in Inuktitut

Authors: Shanley Allen; Hannah Lee

Inuktitut (Inuit) is spoken by some 100,000 speakers in eastern Canada. It is an agglutinative polysynthetic language which allows up to 10 morphemes per word. Thus, the challenge of language learning is very different from that in English because much of syntax occurs within the word rather than across words. Studies with eight children aged 1;4-3;4 show a gradual increase of mean length of utterance in morphemes with age (from MLUm 1.18 to MLUm 3.25). However, most of this growth comes from more morphemes per word rather than from more words per utterance. Verb and noun roots at the earliest ages typically appear with no inflection, but verbal and nominal inflections appear in most obligatory contexts by age 2. By 2;10 almost a fifth of words contain four or more morphemes, but even by 3;4 no utterances are longer than three words and most utterances contain only one word. Children show early use of morphology with syntactic functions including passives, causatives, and complement-taking verbs. They also show increasing mastery of polysynthesis including devices that change word class from noun to verb or verb to noun up to four times within a given word. As is typical in the target language, argument omission is very common and few if any utterances are produced using both a subject and an object. In multi-word utterances, they are initially strict in using the default SV and OV structures, and only start to vary word order for pragmatic purposes after age 3. These findings expand on data from a new "acquisition sketch" of Inuktitut following the recently published Sketch Acquisition Manual – a set of guidelines to facilitate acquisition research in understudied languages, which we will also briefly introduce.

Symposium: Evolving professional roles of SLPs to support students with language and literacy needs in school

Speakers: Marie-Catherine St-Pierre; Wenonah Campbell; Pamela Filiatrault-Veilleux; Edith EL KOUBA; Victoria Joffe; Chantal Desmarais

SLP professional roles and school-based practices are expanding to contribute to a more inclusive education for all students. Research findings related to this paradigm shift for students with oral and written communication needs will be shared.

Use of universal design for learning in tiered school-based speech language pathology practice

Authors: Wenonah Campbell;

"Tiered service delivery models create equitable access to school-based speech language services. Instead of focusing solely on supports for individual children, tiered models target the learning needs and well-being of all students. Services typically consist of three tiers, with the first Tier, Universal Services, offering a promising strategy for promoting equity and inclusion, through an emphasis on Universal Design for Learning (UDL).

UDL is an educational framework to support the full participation of students with diverse abilities in education settings by removing unnecessary barriers to learning. It guides one type of universal service provided within a tiered service delivery model and involves speech language pathologists collaborating with educators to provide multiple means of engaging children, representing information, and expressing learning. Use of UDL principles leads to the development of educationally relevant and accessible strategies, tools, and environments for all.

This presentation will define UDL and describe this framework; share evidence on the roles of speech language pathologists in implementing UDL, including to support language and literacy; and identify specific UDL strategies and tools that speech language pathologists can use when collaborating with educators. Resources from a free health professional development program, FIRST, available at, first.machealth.ca also will be briefly introduced to enable further learning about tiered models, universal services, and UDL.

Given the increased use of tiered service models in education settings, speech language pathologists need to be aware of UDL and its role in the provision of universal services. This session will support speech-language pathologists to better advocate for their role in implementing UDL and collaborating with educators to support the participation of all students, including students with oral and written communication disorders."

School-based SLPs' perceptions on their involvement in Tier 1 interactive reading intervention

Authors: Pamela Filiatrault-Veilleux; Paméla McMahon-Morin (Université de Montréal); Claire Croteau (Université de Montréal); Wenonah Campbell (McMaster University)

Background: With the advent of tiered models of service delivery, school-based SLPs' roles are evolving in ways that promote inclusive education. Of note, interactive reading programs are designed to support language and literacy skills of children with diverse profiles in inclusive settings. Nevertheless, SLPs identified barriers to implementing such practices, including a lack of collaboration time and an increased workload. To our knowledge, no study has yet examined the benefits and levers for change perceived by SLPs from their involvement in Tier 1 interactive reading intervention in francophone contexts. Objective: This qualitative study examines school-based SLPs' perceptions regarding their involvement in Tier 1 interactive reading intervention to determine the perceived benefits and levers for change in their practice in two French-language educational contexts in Canada. Methods: Seven SLPs who had received training to deliver an interactive reading intervention program in kindergarten classrooms from either minority or majority francophone context were recruited. Individual semi-structured interviews were carried out followed by two focus group meetings, within which the SLPs from both contexts were distributed. A thematic analysis is underway. Results: Preliminary themes identified as levers for change include: (1) the time allocated for planning and implementing the program within a coordinated collaborative service delivery model; (2) the adaptability of the program according to the linguistic, cultural and socio-demographic context of each classroom; and (3) the importance of the teacher-SLP partnership. The SLPs reported substantial benefits to their own practice, including a broader impact within their school district resulting in a better understanding of their roles and providing earlier support to more children with various support needs including those with language and communication disorders. Conclusions. Study findings offer school community members several insights about how to facilitate SLPs' involvement and crucial contribution in implementing inclusive educational practices.

Supporting language in preschoolers: using SOLEM, a collaborative approach between SLPs and teachers

Authors: Edith EL KOUBA; Valentine Levaux (Université de Liège); Christelle Maillart (Université de Liège)

Objective: The present study aims to determine the effects of a preventative, preschool-based child language intervention program, SOLEM (Soutenir et Observer le Language en Maternelle), on the use of language support strategies by preschool teachers. SOLEM features a collaborative coaching model involving Speech and Language Pathologists (SLPs) alongside preschool teachers, in French-speaking Belgian preschools. Methods: A single-case experimental design with repeated measures was applied within tailored on-site interventions. Specific language support strategies were targeted after being selected based on the contextual needs of each teacher and her classroom. Teachers' use of language practices was documented through video sequences collected before, during and after the intervention. Videos were analyzed using a measurement grid that allowed for the identification of language practices that have been documented in the literature. Results: Based on the repeated measures, the results indicated a significant decrease in directive language strategies. They also revealed a significant increase in the use of high-level decontextualized language within classroom activities. The data also allowed for the identification of the co-occurrence of different language support practices within the same interaction sequence. The use of strategies extended to different classroom activities (rituals, storytelling, free play, etc.). In particular, the findings highlight the variability in teacher's proficiency in using targeted language practices, which reinforces the importance of tailoring language support goals based on the contextual needs of the teacher and her classroom. Clinical implications: Implementing a collaborative program to support language development in preschoolers may have positive effects on teachers' use of positive language practices. The study findings support the importance of embedding prevention programs in real-world contexts, through a collaborative coaching process that actively involves the speech and language pathologists and teachers.

Exploring Collaborative Practice working with Speech, Language and Communication Needs in Schools

Authors: Victoria Joffe;

"Educational services for children and young people with Speech, Language and Communication Needs (SLCN) in the UK, and in other parts of the world are provided at three levels: universal, targeted, and specialist, with universal provision available to all children in the classroom through whole class teaching, targeted to those at risk for or with mild to moderate SLCN, delivered individually or in small groups, and specialist support focusing on the students with the most severe and complex difficulties, typically delivered by the Speech and Language Therapist (SLT). Frequently, the contribution from the SLT will be at its maximum when working at the specialist level of provision, but it can be argued that best practice in the management of children and young people with SLCN in schools is embedded in partnership working, incorporating input from teaching and support staff and the SLT across all three levels of provision.

This presentation provides an overview of the evidence base in working with children and young people with SLCN across the three levels of service provision, targeting secondary school aged students and vocabulary and narrative outcomes. The nature, type, and duration of the intervention at each level is explored, as well as the description and severity of the language disorder. The mechanisms underlying the delivery of the intervention in the education context, drawing on the expertise of the education and speech and language therapy staff is explored, and the best ingredients for effective collaboration are identified. Views from service users, teaching and support staff and SLTs are gathered to inform how best to meet the needs of children and young people with SLCN in schools. Facilitators and obstacles to collaborative practice are discussed and a framework for enhancing language and communication for all students in schools, through partnership working, is shared."

Speech language pathologists supporting teachers in special education classrooms in high school.

Authors: Chantal Desmarais;

Background: A recent codesign and implementation study led to the publication of the intervention programme ESCALADE aimed at young adolescents with Developmental language disorder (DLD). ESCALADE has three main goals, (i) improve self-knowledge including characteristics of one's communication abilities and challenges, (ii) increase autonomy in selecting and using communication strategies, and (iii) support the use of these communication strategies to improve social interaction. The 17 activities of the program were implemented over the course of one school year. This was preceded by training to teachers to reach a common understanding of DLD and of the needs of adolescents with DLD. Teachers were supported via Community of practice (CoP) meetings led by a speech-language pathologist (SLP). The aim of this study is to examine the strategies used by the SLP in this support role. Methods: 19 teachers or school personnel participated in the CoP meetings that were audio recorded and transcribed. A qualitative thematic analysis procedure was used to

highlight categories of support strategies used by the SLP. Results: Four main support categories were used by the SLP to enrich the implementation of ESCALADE: (i) seeking the opinions of teachers, (ii) verifying their needs, (iii) sharing expert knowledge about DLD, (iv) problem-solving with teachers to find solutions to problems for implementing activities aimed at improving the youth's communication. When surveyed, teachers confirmed the positive effect of the SLP support in putting in place strategies for language and literacy. Conclusion: Results suggest that SLPs can play a positive role, even if it is indirect, in supporting adolescents with DLD in high school and that this role should be encouraged. This will be discussed in view of recommendations on knowledge brokering and interdisciplinary support that stem from recent research.

Symposium: Orchestrating Action, Gesture, Speech and Sign in Family dinners

Speakers: Aliyah Morgenstern; Christophe Parisse; Sophie de Pontonx; Corrado Bellifemine; Alice Brunet; Lourdes de León; Gary Morgan

This panel highlights the semiotic differences between adults and children using one or several spoken languages, French, English, Russian, and a sign language, LSF as well as the orchestration of language and dining practices.

Interlanguaging and dining in signing and speaking family meals

Authors: Christophe Parisse; Stéphanie Caët, Léa Chevrefils, Aliyah Morgenstern

"In family dinners, language practices can be analyzed as they occur in real life and real time in the framework of multiparty interactions and multiactivity (Haddington et al. 2014) to capture the multiple deployments of the embodied behaviors of speakers and signers.

In this study, we analyzed four French signing and four French speaking family's coordination of interlanguaging and eating around the dinner table. The families composed of two parents and two to three children aged 3 to 10 were filmed with three cameras (including a 360° camera) to capture all family members' behaviors. The three videos per dinner were synchronized and coded on ELAN. We annotated all participants' acting, languaging, and gaze. We focused on adults' expertise and on children's socialization to the finely-tuned coordination and in situ organization of the joint activities of conversing and dining that fully engage the same body components according to the language used and their age.

Our quantitative analyses show how family members collaboratively manage multiple streams of activity through the embodied performances of dining and interacting. The hearing participants use the affordances of the visual and vocal channels to maintain the simultaneity of the two activities. The deaf participants also skillfully manage to alternate smoothly between dining and interacting, but within a single channel and differently than the hearing participants. Deaf and hearing younger children manifest how they are in the process of developing these skills and manage multi-activity as well as adults, with some differences between the developmental path of the deaf and hearing children. Our qualitative analyses focus on the ecology of visual-gestural (LSF) and audio-vocal-visuo-gestural (French) languaging in the context of co-activity according to language and participant. We open new perspectives on the management of action, gesture, gaze, speech and sign in multimodal interlanguaging in multiparty interaction."

Building participation frameworks: the role of gaze in signing and speaking family dinners.

Authors: Sophie de Pontonx; Pauline Beaupoil-Hourdel, Diane Bedoin, Loulou Kosmala, Aliyah Morgenstern, Claire Danet, Stéphanie Caët.

"Goffman's critique of the speaker-hearer dyadic model (1974) and cross-cultural studies suggest that children experience and learn language not just in dyadic but also in situated multiparty interactions (Ochs and Schieffelin, 1984). Family dinners involve several activities, among which eating and languaging are central. In this multi-activity setting (Haddington et al., 2014), children and adults play different participant roles (Goffman, 1981). Children can be integrated in collaborative talk and broaden their experience of various interactional practices. They are socialized to conduct multiparty interactions and are dynamically involved in various participation frameworks. This study focuses on the role and management of gaze and how it may indicate (dis)engagement throughout the conversation in coordination with dining activities. We compared signing and speaking family members according to their language, status and age.

We analyzed dinners in four families with two adults and two children, two using French and two using French Sign Language (LSF). The data was systematically coded for 1) audible or visible languaging or acting produced by each participants, 2) which participants the acting or languaging was directed at, 3) participants' gaze orientation towards people or objects. Quantitative results from our coding are complemented with qualitative analyses of chosen extracts to provide a fuller picture of the identified features of family dinners.

Our analyses underline differences in gaze and turn distribution patterns according to the varying participation roles, age, and language. Both speaking and signing children in our data develop the skill to participate in the interlanguaging while dining and are socialized to the specific crucial functions of gaze according to the affordances of the language they use. Adults adapt to and scaffold their children's management of gaze in order to orient their visual attention when and where it is most needed during the dining and languaging activities of family dinners."

Focus and emphasis marking through multimodal prosodic cues in spoken and signed family discourse

Authors: Corrado Bellifemine; Christelle Dodane, Karine Martel, Fanny Catteau, Marion Blondel

"Prosody can be studied with a multimodal approach that integrates vocal and gestural cues in spoken and sign languages (Ferré, 2014; Lombart, 2022). Focalization is an important discursive feature that can be expressed, among other semiotic means, by prosodic cues. It is defined as the process of emphasizing certain elements of speech (syllables, words, phrases) within an utterance, in order to draw the interlocutor's attention (Groussier & Rivière, 1996 : 84).

The goal of this presentation is to compare how speaking and signing family members establish focalization through multimodal prosody. Thus, we compared dinner data collected in two French-speaking and two LSF-signing families. We centered our study on the way adults and children emphasized elements of their utterances through different multimodal prosodic markers based on the type of language: pitch accent, intonation, sign amplitude, hand-gestures, gaze, head movements. These indissociable facets of prosody were integrated in our analyses of the pragmatic value and informational status of the focalized elements (information and comments, questions and answers, directives…) based on the participants' dialogic moves. We coded gestures, signs and the informational status of the emphasized element in ELAN, and we made acoustic measurements using Praat to analyze the vocal cues associated with focalization.

Results show that, regardless of their profile or of their role in the family (adult vs child), both signing and speaking family members used different bodily components (especially hand-gestures and head movements) and specific prosodic patterns (i.e. scansion) to convey focalization. At the pragmatic level, comparisons between participants reveal that focalization was mostly associated with informative and directive moves in adults, and answers and comments in children.

Prosody can thus be considered as a multidimensional process that allows participants to establish joint attention, express meaning adequately, but also take the floor and manage the dynamics of turn-taking in multiparty interaction."

The role of gesture in multimodal bilingual family dinners

Authors: Alice Brunet; Yana Kut, Aliyah Morgenstern

"In multilingual environments where languages meet and intermingle, it is challenging for children to carve out their own bilingual interactional space. Often shared cross-culturally, gestures might represent more stable forms since words may vary in each code for the same function. The study of bilingual first language acquisition allows the researcher to investigate whether asymmetrical bilingual development impacts the quantity and functions of gesture production on the communication flow. Multimodal and multilingual communication could reinforce bilingual children's language socialization into their bicultural community.

To study bilingual children's use of symbolic gestures as their multimodal skills blossom, we collected video-recorded data from 4 bilingual families (English/French and English/Russian). We transcribed multilingually and coded gesture production both when the children used their dominant and non-dominant language.

We show that gestures play an important role in bilingual children's management of communication. Our results suggest that children do not produce more gestures when using their non-dominant language, but rather that they used more gestures during instances of multilanguaging. This would mean that gestures are not used primarily to compensate for access to more complex verbalizations in their weak language. Detailed contextual analyses of the children's productions indicate that gestures produced by bilingual children in multilingual interactions with adults pave the way for the interlocutors' access to meaning in each language and in their own weaker language; multimodality and multilingualism interact constantly in the meaning-making process.

Bilingual children seem to be particularly skilled at resorting to gesture as well as multilanguaging to enhance inter-fluency via all the semiotic resources at their disposal. In their search for the best way to package their message, the bilingual children in our dataset create successive transitory multimodal and multilingual systems."

Symposium: Mandarin-speaking children's language acquisition and literacy experience in early childhood

Speakers: Cs Cs; Kanyu Yeh; Wun Tsong Chaou; Pao chuan Torng

The papers in this symposium examine Mandarin-speaking children's linguistic abilities and literacy experiences in early childhood, addressing crucial issues on gesture-speech combinations, referential choice, and shared-book reading interactions.

Gesture-speech combinations and language development of Mandarin-speaking young children

Authors: Kanyu Yeh; Chiung-chih Huang Affiliation: National Chengchi University

"Children's gestures provide them with a tool to extend their communicative repertoire to express meaning they cannot yet express through speech, and reveal their current cognitive ability and readiness to learn (Goldin-Meadow, 2007). Their gesture-speech combination may convey similar information about an object (e.g., pointing to a dog + "dog") or supplement each other to convey sentence-like meaning (e.g., pointing to a dog + "sleeping" to mean "the dog is sleeping"). Children's early uses of various types of gesture-speech combinations were related to different aspects of their later linguistic development, such as lexical and syntactic abilities (e.g., Fasolo & D'Odorico, 2012). However, earlier research focused mainly on children from Western cultures, less is known about the role of gesture in Mandarin-speaking children's development.

The present study investigated Mandarin-speaking children's development of multimodal communicative ability during early childhood. Longitudinal data of two Mandarin-speaking children's daily conversations with their mothers were collected at ages 1;9, 2;0, and 2;3. The children's gesture-speech combinations were coded for gesture types (deictic gestures, emblems, iconic gestures, and other gestures) and utterance types (vocal, single argument, multiple arguments), as well as the relationship between gesture and speech (complementary, supplementary) in each cross-modal combination. The results showed that the children frequently combined deictic gestures and emblems with speech to co-express meaning. Utterances with multiple arguments increased in the children's production during their development, while utterances with single argument remained the majority type in their cross-modal combinations. The children's gestures complemented speech at the younger age, and gradually provided supplementary information for their speech. Qualitative analysis further revealed increasing sophistication in the children's multimodal communicative ability. This study contributed to a limited number of studies on Mandarin-speaking children's communicative ability in speech and gesture and provided cross-linguistic evidence for children's multimodal language development."

Referential choice in oral narratives of Mandarin-speaking children: A developmental study

Authors: Cs Cs;

"A speaker's use of referring expressions is associated with the degree to which a referent is linguistically retrievable or cognitively accessible to the listener. For instance, indefinite noun phrases (NPs) are frequently used for introducing new referents, whereas definite NPs are opted for subsequent mentions of referents. Unlike languages such as English which differentiates given from new referents in terms of definite and indefinite articles, Mandarin Chinese has no fully grammaticalized definite article, and usually conveys the given-new distinction through a combination of nouns with demonstratives, numerals, or classifiers. Given this, this study examined how Mandarin-speaking children use referring expressions to mark given vs new referents in oral narratives.

Thirty Mandarin-speaking 5-year-olds, thirty 9-year-olds, and thirty adults participated in this study. The narrative data were based on Frog, where are you? Arguments were coded in terms of referential form, function, and adequacy. Linguistic forms were classified into three major categories: nominals, pronominals, and null form; nominals were further divided into bare nouns, indefinite NPs (yī běn shū 'a book'), and definite NPs (zhè běn shū 'this book'). Three referential functions were differentiated: (1) introduction, (2) maintenance, or (3) reintroduction of a story character.

The results showed that children and adults primarily used nominals to introduce and reintroduce referents, whereas null forms were most preferred for reference maintenance. Regarding nominal subtypes, 9-year-olds and adults reserved indefinite NPs for introducing referents and definite NPs for subsequent mentions; 5-year-olds, however, chose between bare nouns and indefinite NPs for introducing referents, and opted for bare nouns for subsequent mentions, suggesting that 5-year-olds were still developing their skills in choosing appropriate nominal subtypes to mark given vs new referents. Additionally, our data showed less adequate referencing in

children as compared with adults, and higher adequacy level for introduction than the other functions across age groups."

Shared book reading with Mandarin-speaking preschool children from rural areas in Taiwan

Authors: Wun Tsong Chaou; Yu-Hsuan Cheng & Chi-Chi Yang, Puli Christian Hospital; Pao chuan Torng, National Taipei University of Nursing and Health Sciences

"Previous research has suggested that shared book reading (SBR) be a promising intervention approach for promoting and facilitating child language development. However, we still lack knowledge about the feasibility and effectiveness of SBR for young children from rural areas with limited resources. Therefore, the focus of this study was on SBR experiences and emergent literacy of Mandarin-speaking preschool children from rural areas in Taiwan.

195 preschool children from 10 kindergartens across Nantou, a mountainous county in central Taiwan, were recruited to take part in a nine-month SBR program, with assistance of speech-language pathologists. A questionnaire was developed to examine the quantity and quality of reading interactions at kindergartens and at homes, such as children's motivations and interests in reading, reading habits parents have with their children, family time spent with reading per week, reading resources, demographic factors, and self-evaluation through the nine-month program. At the end of the program, children and their parents were asked to fill out the questionnaire.

Our results showed that all children were actively engaged during SBR interactions and a majority of the parents were aware of the benefits of SBR on facilitating children's language skills, such as enhancing print and word awareness, and improving verbal fluency. Parents were positive about SBR interactions at homes, but reading resources were extremely lacking in the rural areas. The impact of SBR on young children's emergent literacy, and difficulties of using SBR with rural children were analyzed. With the inclusion of equitable quality education for all in the 2030 Sustainable Development Goals, speech pathologists as well as early educators need to provide more supports for families of rural children. The paper concluded with suggestions for future research on rural children's emergent literacy and discussion of implications for clinical and educational practices."

The application of dialogic reading during shared book reading activity at home

Authors: Pao chuan Torng; Ching-Hsien Chang, National Taipei University of Nursing and Health Sciences

"Past studies in western societies have reported positive gains of using dialogic reading (DR), the interactive reading approach (Whitehurst et al., 1988), such as enriching emerging literacy skills and stimulating early language development. In Taiwan, though researchers have recognized the important of early reading experiences and tried to promote involving DR in shared book reading (SBR), research on the feasibility of this strategy with Mandarin-speaking children is sparse. This study aimed to investigate the application of DR during parent-child SBR in Chinese families.

This study focused on the implementation of DR with Mandarin-speaking preschoolers aged 3-5 years. Ten parent-child dyads were recruited to participate in a SBR program over 20 weeks. The researchers led the SBR sessions once a month, with each session lasting one and a half hours, training parents to read using the DR strategy. The parents were taught to use the PEER sequence, namely to prompt, evaluate, expand, and repeat a child's responses, and were demonstrated how to begin the PEER sequence with the CROWD techniques including completion, recall, open-ended, wh-question, and distancing. At the end of each SBR session, parents were asked to fill out a questionnaire regarding SBR frequency at home, gains/problems with the DR techniques, attitudes towards DR, number and types of books read, and evaluation of the child's performance.

Results showed that all participants were actively engaged in SRB activities led by the researchers, and that the parents did try to employ DR when doing SBR at home. Generally, though parents encountered difficulties in implementing PEER/CROWD, their abilities in using the techniques gradually improved after the monthly SBR session instructed and guided by the researchers. Findings on the effects and difficulties of implementing the DR strategy in Chinese families are discussed. This study has implications for future research and clinical practices."

Symposium: Children's Complex Language and Theory of Mind Development

Speakers: Jill de Villiers; Stephanie Durrleman; Isabelle Charnavel; Hristo Kyuchukov; Jenna Croteau; Silke Brandt

The relationship of language acquisition to later Theory of Mind (ToM), such as false belief reasoning, remains debated: are the effects of language general or specific? If specific, which aspects matter?

Complements and FB reasoning: an ecological training study in children with and without autism

Authors: Stephanie Durrleman; Stéphanie Durrleman

"Sentential complement structures play a role in children's explicit reasoning about false beliefs, and training complements enhances false belief (FB) reasoning in typically developing (TD) children and those with autism and delays in language and ToM. However, some studies suggest that acquiring relative clauses may also help with FB reasoning. A training study with a crossover design tested whether complements showed an advantage over relative clauses, with parents reading specially designed children's books targeting syntax. The books each included 12 examples of the critical structure in a natural story format, and were closely matched in complexity.

Parents of 22 French-speaking children, 12 TD and 10 with autism, were recruited for an eight-week dyadic reading program at home. Children had to be above the 3-year-old level on standardized language tests, but to fail pretests of complements, relative clauses and FB reasoning. Two experimental groups received a different order of exposure to the target (complement) versus control (relative clause) books. Children were tested again with different variants of the pretests at the intermediate step when they changed books, and at the posttest. Parents reported their reading frequency, which varied widely across participants but did not differ across books.

The target (complement) book had a specific impact, regardless of order (Wilcoxon tests: $p<.005$), not only on complement understanding but on FB reasoning (Wilcoxon tests: $p<.02$). The training effects of the complement book did not statistically differ for TD and ASD children. There was no effect of the control book.

The results confirm the impact of training sentential complementation to enhance FB reasoning, which was not true for relative clauses. The effect occurred for children with and without autism, but for the first time we show that these benefits can be obtained via an ecological training of this structure, by parents at home."

Taking Perspective in Motives and Purposes: The Case of Adjunct Clauses and Theory of Mind

Authors: Isabelle Charnavel; Stéphanie Durrleman, Jill de Villiers, Amber Liu

"The paper aims at investigating how the acquisition of adjunct clauses (such as causal – because – or purpose – in order to/so that – clauses) relates to the acquisition of Theory of Mind (ToM). Previous studies examining the relation between syntax and ToM usually focus on complement clauses (such as think that P), which are closely linked to the understanding of false belief. Adjunct clauses, however, have been neglected in this literature although they can involve an interaction of points of view which should be uniquely informative about ToM. For example, the interpretation of the causal relation in the sentence Dora left the party because the cupcakes were yucky requires adopting Dora's point of view (like the interpretation of attitude clauses) without involving false belief (unlike the interpretation of attitude clauses).

In our study, we investigated whether the mastery of various types of adjunct clauses (causal/purpose, perspectival/non-perspectival) correlates with ToM performances. In an online experiment, (N=38) 3-8-year-old children's understanding was tested using a set of nine specially designed stories, after each of which Memoji puppets attempted a summary using adjunct clauses (4 per story). The child had to judge whether the puppet retained the truth expressed in the story as they rephrased it. In the same session, the child's ToM understanding was assessed based on classic false belief tasks (8). The results reveal a clear correlation between ToM and the understanding of perspectival adjunct clauses. The strong correlation ($r (34) = .51$, $p<002$) remains when controlling for the child's chronological age and their performance judging the truth of purely factual adjunct clauses. Therefore, the child's performance on false belief tasks is uniquely connected to their understanding of adjuncts entailing points of view, opening new avenues of exploration in the relationship between complex language and ToM."

Retelling Narratives Entailing Second Order False Belief in Lyuli and Uzbek Bilingual Children.

Authors: Hristo Kyuchukov; Jill de Villiers

"The first known study of the socio-cognitive development of Lyuli children, a Roma-type group living in Bukhara in Uzbekistan was conducted in schools in Bukhara serving both Lyuli children and Uzbek children. Each group is multi-lingual in a different variety of Tajik (L1) with Uzbek (L2), but their sociolinguistic circumstances and educational preparation are different. There has been less cross-cultural work on later stages of Theory of Mind development, in which children have to make inferences about the mental states of characters in a complex narrative.

Two well-known second-order narratives were used with small cultural adaptations: the bake sale and the birthday story. The children from both groups (N=38, ages 7-8 years) did remarkably well on these tasks, and their multilingualism is hypothesized to be a possible source of their success relative to other children studied with similar narratives across cultures. The current report analyzes the children's attempts to retell the second order false belief story told/questioned in one language (e.g., Tajik), into their other language (e.g., Uzbek) and vice versa. Do the children successfully capture the essential points of the story, and is that a function of how well they did on answering the belief questions?

The two groups were alike in two major respects. They both did better at retelling the story into their second language that they first heard in their native Tajik, rather than the reverse. Furthermore, both groups retained essential points of the complex stories very well (average overall 4.36 on a 5-point scale). The Lyuli children did better on retelling the more they understood the story in their native language, whereas the Uzbek children showed a correlation across retellings in their two languages. The small differences between the groups in story quality (p<.04), are attributed to the extra kindergarten year the Uzbek children received."

When and How do Children Understand Referential Opacity?

Authors: Jenna Croteau; Jill de Villiers

"In our study children (N=79, ages 3-7) answered questions about characters with dual designations (e.g., Uncle Albert/an astronaut) concerning protagonists who either knew (ProtKNOW) or did not know (ProtIGNORANT) the character under both designations. Philosophy of language has long recognized that there are restrictions on substituting terms within the scope of propositional attitude verbs, i.e., "referential opacity". But only intensional readings of NPs are restricted, not referential/extensional NPs. In developmental psychology, the focus has been on when children recognize that intensional readings are conditioned by the knowledge state of the agent. Rackoczy claims that referential opacity is mastered with 1st order false belief, but the Mental Files approach (Perner) argues for a protracted development.

In this study children could easily answer questions like:

a) "Does ProtIGNORANT know that Uncle Albert is an astronaut?"

yet struggled until age 7 with questions like:

b) "Does ProtIGNORANT know he took an astronaut to his room?"

We also found that false belief understanding correlated with (a) but not (b). We propose that "an astronaut" in an identity predicate like (a) is easily understood as intensional and thus performance reflects ToM. However, in other predicates like (b) it is unclear whether "an astronaut" is meant extensionally or intensionally without sophisticated comprehension of discourse dynamics. Both speaker and hearer have established a common ground for the dual identity, so is the question about the ProtIGNORANT's knowledge of the designation or of the event? Definite and indefinite articles in English do not uniquely constrain the status of the NP as extensional or not. We hypothesize that children initially default to a de re reading in which they treat "an astronaut" as extensional, giving the truth of the event priority. The phenomenon of referential opacity is thus best considered to entail semantic/pragmatic developments, not just conceptual change."

Symposium: Acquisition of complex predicates in diverse languages

Speakers: Jekaterina Mažara; Dorjderem Byambasuren; Alice Johnson; Dagmar Jung; Sabine Stoll

What challenges do complex predicates pose for L1 learners and what and how can we compare them cross-linguistically? The talks cover a broad range of language families and topics surrounding complex predicates like polysynthetic verbs and converbs.

Acquisition of converbs in Mongolian-speaking rural and urban children

Authors: Dorjderem Byambasuren; Shanley Allen

"Converbs are a complex morphosyntactic structure used for clause chaining in many languages but are not well-understood in language acquisition in general. Mongolian is one language in which converbs are prevalent. In Mongolian, converbs can be used to chain either coordinate or subordinate clauses together - usually two but potentially more. Additionally, subordinating converbs often appear with participles to express temporal relations. The last verb in the chain is the finite verb, carrying tense and other information.

Previous studies on converbs have mainly focused on analyzing these constructions in individual languages from a theoretical perspective. Unfortunately, little is known about how children's converbs are acquired cross-linguistically and empirically. The present study investigates how Mongolian-speaking children use converbs in rural and urban communities, whether the use of converbs differs across the communities, and whether children's age correlates with converb use within each community. A total of 56 typically-developing monolingual children (36 rural and 20 urban) participated in this study. To facilitate comparison across the children, elicited narrative data was collected using the "frog story" (Meyer, 1969).

We found that rural children outperformed urban children on the frequency of converbs per utterance and diversity of types of converbs. Further, we found a correlation between age and converbs per utterance in the urban group, but not in the rural group. Finally, children in both groups predominantly focused on using coordinating converbs rather than subordinating converbs. These findings imply that the urban and rural children showed a considerable difference in how they use converbs, and thus the developmental trajectory of converbs for Mongolian-speaking children may vary depending on their immediate socio-cultural context. These results contribute to expanding the diversity of the field of language acquisition and provide insights not only into Mongolian acquisition but also into the acquisition of this structure in agglutinative languages."

Morphological simplification of complex structures in Inuktitut child-directed speech

Authors: Olga A. Johnson; Shanley Allen

"Caregivers typically use a simplified mode of the language – child-directed speech (CDS) – when addressing young children. The most studied domains of CDS are lexicon, phonetics, and prosody (Snow, 1995), while the morphological aspects of this speech mode have received much less attention. When it comes to the morphological properties of CDS, polysynthetic languages constitute a great source for investigation. In this study, we investigate the use of complex morphological structures with a word class change within a single word in Inuktitut CDS. Inuktitut is a polysynthetic agglutinative language of the Inuit-Yupik-Unangan language family spoken in arctic Quebec, which allows more than ten morphemes per word and in which the meaning of an entire sentence can be expressed in one word (1).

(1) Illujaraalummuulaursimannginamalittauq.

  illu-juaq-aluk-mut-uq-lauq-sima-nngit-gama-li-ttauq

  house-big-EMPH-ALL.SG-go-PAST-PERF-NEG-CSV.1sS-but-also

  "But also, because I never went to the really big house." (Dorais, 2011)

Clearly, such a complex morphological system presents special challenges for young children, which raises a question of whether caregivers shape their CDS in ways that facilitate acquisition. Using the data from mothers addressing eight Inuktitut-speaking children aged 0;11 to 3;6, we investigated whether the frequency and complexity of polysynthetic structures in CDS are dependent on the stage of the children's linguistic development. The results demonstrate that the number and morphological complexity of the structures with a word class change increased as the children developed linguistically. The variety of nominalizers and verbalizers – the key components of such structures – also increased through the stages and were used in variation sets, which help children acquire morphological items by providing examples of use of the same

morpheme in morphologically contrasting environments. These results show the presence of morphological simplification in Inuktitut CDS and demonstrate that such simplification is fine-tuned, i.e., that mothers are sensitive to their children's level of linguistic development."

Mixed verbs in Dene language acquisition

Authors: Dagmar Jung; Olga Lovick, Allison Lemaigre, Jekaterina Mazara

"Dene Sųłıné (Athabaskan) is the primary language spoken in Clearwater River and La Loche, Saskatchewan. Children grow up in a bilingual setting with English dominating social media, children's programming, Youtube, etc. Speakers older than 15 usually prefer speaking Dene. In this study, we examine the use of English-Dene mixed verb forms (uninflected English stem plus inflected Dene light verb) in the input and production of children aged 2;0-5;0 in a longitudinal naturalistic corpus.

Dene languages challenge learners with their long, morphophonologically opaque prefix strings, combined with intransparent verb stems that inflect for aspect. In child-directed speech (CDS) Dene forms alternate with mixed verbs in variation sets (Küntay&Slobin 1996). The most common mixed construction in CDS involves the Dene verb 'do, make'.

(1) wɛ́ k'a sënǫ́-dhër

    over.there   by   play.2SG-play.IPF

    wɛ́   k'a   play   hán-lë

    over.there by play   thus.2SG.IPV-do.IPV

    'Play over there'

Some constructions with English stems and Dene light verbs are conventionalized, e.g. 'I call/phone' phone hɛ́sle, or 'you send her a facebook message' facebook message hę́leo, and used by speakers of all ages. Others represent alternating choices; adults rarely switch to fully English utterances, but can replace Dene verbs by complex English-Dene mixed forms. In this study, we analyze the most frequent mixed predicate constructions in CDS and children's use. We compare the developmental stages as well as the amount of mixing. Children start to use this type of complex predicate from the age of around 3;6, building on simpler uses of 'to do'. After generalizing the use for the expression of most transitive predicates some verb types are switched to Dene-only again (play hánlë -> sënǫ́dhër 'you-sg. play'). We show the developmental trajectory of these predicates and its correlation with the acquisition of the Dene verb prefix system."

Disentangling statistical properties that drive morphological acquisition in diverse languages

Authors: Sabine Stoll; Giuachin Kreiliger, Jekaterina Mazara, Balthasar Bickel

"Children's ability to leverage statistical distributions to segment and learn linguistic elements has been explored in a large body of literature. However, we know little about which specific statistical properties shape the process of acquisition in real-life data. Here, we assess the effect of five factors on the acquisition of verbs in a sample of morphologically diverse languages. We analyze predicates produced in the input as well as during morphological development of 20 children in naturalistic longitudinal corpora of five languages: Chintang (Sino-Tibetan); English (Indo-European); Japanese (Japonic); Turkish (Turkic); and Yucatec (Mayan).

To evaluate children's development, we computed the entropy of their use of verb stems and morphology and compared it to the measures in surrounding adult speakers within the same recording context. This allows us to examine the development in children's flexibility of predicate use. We ran a hierarchical nonlinear distributional model to fit the development, using the exponential function to describe the learning curves to evaluate the speed of acquisition. We fitted models with the following five factors: i) difference between heads (main stems) and dependents; ii) language; iii) log-number of heads and dependents; iv) deviation of the empirical input distributions from the theoretical Zipf distribution; v) entropy of heads and dependents.

Model comparison shows that convex deviations from the theoretical Zipfian distribution, i.e. more higher-frequency types, predicts the development best. The number of items has a weaker but still appreciable effect. All other factors explain the data less well, i.e., differences between languages, item types, and system entropies have no impact on the acquisition dynamic. This suggests that the acquisition process is shaped by the availability of a particularly large number of high-frequency items as well as by the number of elements that must be acquired as part of the system."

Symposium: Influences on young bilinguals' lexical trajectories across languages

Speakers: Katrin Skoruppa; Jessica C. Weiner-Bühler; Leila Schächinger Tenés; Robin Segerer; Letizia Volpin; Ludovica Serratrice

Four contributions will present longitudinal trajectories of lexical acquisition across languages in German- and French-learning bilingual infants and preschool children, and link them to their phonological, pragmatic and metacognitive skills.

Phonological Memory and Vocabulary Skill Development in Young Dual Language Learners

Authors: Jessica C. Weiner-Bühler; Skoruppa, K., Schächinger Tenés, L. T., Segerer, R. K., & Grob, A.

"Children's vocabularies expand tremendously during the preschool years. Nevertheless, considerable variation exists concerning children's learning speed and skill development. The capacity for learning new words and expanding vocabulary knowledge is assumed to be related to children's phonological memory skills, indicated by their ability to repeat novel words (i.e., nonword-repetition). This idea is supported by several cross-sectional studies examining monolingual preschoolers and school-aged children. However, research is still missing that investigates specific interrelations in children growing up speaking more than one language, i.e., dual language learners (DLLs). We hypothesized reciprocal booster effects between vocabulary skills and later phonological memory skills and vice versa, with similar effects for both of DLL-children's languages.

We studied 58 DLL-preschoolers longitudinally (age-range at t1 = 36-63 months; 55% female). At three measurement time-point (t1-t3), we assessed phonological memory skills using a cross-linguistic nonword-repetition task and evaluated receptive-level vocabulary knowledge via standardized testing-battery in both of the children's languages (i.e., Italian or Turkish as the heritage language; German or French as the societal language). Random-intercept cross-lagged panel modeling (RI-CLPM) explored the interrelations between DLL-preschoolers' phonological memory and vocabulary skills over time. Specifically, RI-CLPM evaluated whether a deviation from a DLL-child's phonological memory trait-level prospectively affected his/her deviation from the vocabulary skills trait-level, and vice versa.

Results revealed a trend-like effect where t1 societal language vocabulary skills predicted better t2 phonological memory abilities ($z = 1.95$; $p = .052$), while t1 heritage language vocabulary skills did not ($z = 0.60$; $p = .552$). Subsequent (t2-t3) cross-lagged effects were nonsignificant ($z < 1.54$; $p = .123$). These findings suggest that the relationship between phonological memory and vocabulary learning may differ slightly for DLL-preschoolers when learning their societal and heritage language, but more importantly challenge assumptions about the impact of phonological memory development on receptive-level vocabulary learning in children."

How code-switching behavior predicts language attrition in dual language learning children

Authors: Leila Schächinger Tenés; Weiner-Bühler, J. C., Grob, A., Skoruppa, K., & Segerer, R. K.

"Dual language learning children often experience difficulties acquiring high competence levels in both languages. Particularly with the entrance into the educational system, societal language abilities increase, while heritage language skills stagnate or even decrease. However, an early prognosis of such a heritage language attrition is difficult. Beside linguistic factors, language attrition processes also seem to be related to cognitive and acculturative factors. These very factors are also likely to influence dual language learners' code-switching (i.e., switching between languages) within (i.e., intrasentential) or between (i.e., intersentential) utterances. Code-switching could therefore serve as an early predictor for dual language learning children's future heritage language attrition. We anticipate a heritage language attrition in dual language learning preschoolers, and expect early code-switching behavior into the societal language as well as intra- and intersentential code-switching to be of predictive value.

We examined 93 dual language learners (age-range = 37-74 months; 58% female) growing up with Italian or Turkish as the heritage language together with German or French as the societal language. At baseline, parents reported via a questionnaire their child's intra- and intersentential code-switching from the heritage to the societal language and vice versa. Children's expressive vocabulary in both languages at baseline and follow-up (after ~11 months) were assessed based on standardized testing batteries.

According to our expectations, growth analyses showed that dual language learners' heritage language development stagnated ($b = 0.02$; $p = .489$). For children even experiencing heritage language attrition, their intra- ($b = -0.03$; $p = .023$) and intersentential ($b = -0.05$; $p = .007$) code-switching was of incremental value, beyond further linguistic and cognitive characteristics. However, code-switching direction was not predictive.

Our findings suggest code-switching to represent an easily observable predictor for heritage language attrition, potentially enabling parents and childcare professionals to shape and maintain dual language learners' heritage language competencies."

Disentangling the Bilingual Mind: Vocabulary Overlap in Dual Language Learning Preschoolers

Authors: Robin Segerer; Schächinger Tenés, L. T., Skoruppa, K., Grob, A., & Weiner-Bühler, J. C.

"Studies on preschool-aged dual language learners (DLL) often exhibit limited vocabulary overlap between language systems, with each language assigned to specific semantic domains. The phenomenon of non-overlapping vocabularies is thought to be caused by contextual factors in families and child-care facilities. However, in previous studies this conclusion was based primarily on parental ratings, but not on objective test data, and moreover, mainly focused on contextual factors without taking possible cognitive determinants into account. This research addresses these gaps by using linguistically parallelized standardized tests for heritage and societal languages. It also explores the assumed positive links between vocabulary overlap and cognitive abilities like intelligence, inhibition, and verbal memory.

A sample of 201 preschool-aged DLL (M(SD) age = 48.08 (8.50) months) was examined, with German (69%) or French (31%) as their societal language and Italian (52%) or Turkish (48%) as their heritage language. Linguistically parallelized standardized tests assessed receptive and productive vocabulary. The mean phi-coefficients between item responses in the heritage and the societal language were in the low positive range for both receptive (M(SD) = .10(.24)) and productive vocabulary (M(SD) = .20(.25)), indicating a stronger tendency towards overlapping than distributed vocabularies. The overlap of societal and heritage language vocabulary does not seem to be caused by stable contextual factors, as indicated by absent correlations between receptive and productive vocabulary overlap as well as with social background factors. Surprisingly, cross-sectionally, cognitive variables did not emerge as significant predictors of overlap. Moreover, preliminary longitudinal findings (retest after ~12 months) suggest that vocabulary overlap is more likely a predictor than a consequence of cognitive factors especially for inhibition and verbal memory. These findings challenge the assumption of distributed vocabulary systems in young DLL and suggest that DLL-vocabulary acquisition is primarily driven by the acquisition of concepts, rather than by contextual or cognitive factors."

Phonological and pragmatic precursors facilitate the development of the early multilingual lexicon

Authors: Letizia Volpin; Schwob, S., Ballestraz, A. & Skoruppa, K.

"The emergence of the lexicon is facilitated by precursor skills in other linguistic domains, such as babbling and subsequent phonological development, but also early pragmatic skills, such as turn-taking and joint attention, as well as gesture development. However, these well-known links have mostly been established for monolingual, often English-learning, children, and rarely been studied together. Moreover, specifically bilingual phenomena, such as the influence of cognate status (phonological similarity across languages, e.g. tiger in English – tigre in French), have rarely been studied on an individual level at such a young age.

As part of a larger longitudinal study, we will analyze French-speaking mono-, bi- and trilingual children's lexical development (n=72) from 8-9 to 24 months, using data collected via cross-linguistic parental questionnaires and live tasks.

Preliminary analyses up to the age of 12 months confirm previous literature showing that bilingual and monolingual children's conceptual lexicons (that is, the number of concepts they know a word for in any language) are similar (p's>.1), whereas monolinguals understand significantly more French words than bilinguals (p=.025). We found a significant correlation between gesture repertoire at 8-9 months and receptive and productive vocabulary in all children (p's<.01). Finally, for bilingual children, we were also able to show that phonological similarity across languages significantly facilitates the emergence of a word in both receptive lexica of a given child (p<.001).

By the time of the conference, we will finish data collection at 18, 21 and 24 months. We will incorporate these data in longitudinal mixed effect models, which we will construct and compare stepwise in order to account for the large number of variables of interest and possible co-variates (e.g. parental education), and discuss our results in light of contemporary theories of bilingual language development."

IASCL 2024 Symposia: Friday Morning

07/19/2024, from 08:30 AM to 10:30 AM , Room P300

Symposium: Associations and dissociations between phonological and semantic aspects of word learning

Speakers: Ron Pomper; Shelley Gray; Natalie Munro; Lisa Goffman; Sara Benham

This symposium investigates phono-semantic interactions in word learning for populations of children that are traditionally under-represented in research: bilinguals with typical development and monolinguals with speech or language disorders.

Structural Models of Spanish-English Bilingual Word Learning in Young Children

Authors: Shelley Gray; Mary Alt, Roy Levy, Tiffany Hogan & Nelson Cowan

In an earlier study, we established a comprehensive structural equation model of word learning that fit the data of typically-developing, English-speaking second graders (Gray et al., 2020). Our goal for the current study was to determine if that structural equation model was invariant for typically-developing Spanish-English-speaking bilingual 2nd graders from the same community. Understanding models of word learning is an important first step to understanding the word learning and vocabulary development of bilingual children. Vocabulary is one area that is notoriously difficult to assess for bilingual children, as their learning is distributed across their languages. As such, bilingual children's vocabulary and word knowledge may be routinely underestimated. We tested 80 Spanish-English speaking second graders in a series of word learning tasks. The tasks were delivered via computer and required the children to learn a series of nonword nouns and verbs. The word learning tasks served as indicators for a range of potential models that tapped children's (1) expressive and receptive knowledge and (2) ability to create and store phonological and semantic representations, to link those representations, and to retrieve, recreate and produce information about the nonwords. We tested whether the best-fitting model for English-speaking children from Gray et al., (2020) that included both phonological and semantic factors, was invariant for the Spanish-English speaking group. The model from Gray et al., 2020 did not fit the bilingual group well and we could not establish even the first level of invariance – configural invariance. This means that we cannot assume that the Gray et al. (2020) word learning model measures word learning constructs in the same way for monolingual English and bilingual Spanish-English-speaking children. We discuss the differences in the data and the implication for understanding word learning in bilingual children.

The word learning abilities of children with and without phonological impairment

Authors: Natalie Munro; Stephanie Hearnshaw, Elise Baker

"Children with phonological impairment have difficulty learning the sound system of their language, but what about their vocabulary abilities? Historically it has been assumed that children with phonological impairment are at a higher risk of difficulties with language acquisition, including morphosyntax and vocabulary. However, children with phonological impairment are heterogeneous. In this study, we focus on children with phonological impairment who are lexically precocious. We specifically examine their word learning abilities as a way of offering insight into these children who present as a theoretical conundrum—their phonological and lexical systems seem to be developing with an unusual degree of independence.

Forty-nine 4- to 5-year-old Australian-English speaking children—18 with phonological impairment and 31 with typically developing speech; 21 with lexically precocious vocabulary and 28 with average vocabulary—consented to participate in this study. Four novel non-words were taught through stories, and word learning was assessed at one week post-initial exposure using two measures: confrontation naming and story retell naming.

There was no significant difference in the word learning ability of children with versus without phonological impairment. Regardless of phonological ability, children with above average vocabularies presented with significantly better word learning abilities than children with average vocabularies. Of the 49 participants, 31 named more target non-words correctly in the story retell naming task than in the confrontation naming task. This suggests there may be value in adding semantic context to support new word learning.

Children with phonological impairment and lexical precocity challenge the theoretical understanding about the interdependence of phonological and lexical systems. Irrespective of phonology, children who present with above average vocabularies are better word learners. These findings offer insights for clinicians in understanding the individual strengths and needs of children with phonological impairment, the need to assess their vocabulary, and therefore tailor intervention accordingly."

Enhancing the Word Learning of Children with Developmental Language Disorder

Authors: Ron Pomper; Karla McGregor

Individuals with Developmental Language Disorder (DLD) take longer than peers to learn new words. In two studies, we manipulated the teaching environment to boost word learning. In Study 1, we taught children (Mean age 7;3) novel words via indirect exposure or direct instruction. In the indirect condition, we presented an unfamiliar and familiar referent (e.g., giraffe-necked weevil and ant) and asked children a question (e.g., "are the antenna of the blavid up?"). In the direct condition, we presented an unfamiliar referent while naming it and asked children to remember the name. Using alternative-forced-choice tests, we measured children's accuracy in identifying the correct referent, semantic category, and form (e.g., "did you learn blagid, blavid, or blazid?") for each word. For children with typical development (TD, n=45), direct instruction improved all three aspects of word learning. For children with DLD (n=36), direct instruction only improved their accuracy in linking words to referents. In Study 2, we tested the hypothesis that the simultaneous presentation of new visual and auditory information (in Study 1) was too cognitively demanding for children with DLD who, as a group, had low scores on independent measures of working memory. We taught a subset of children from Study 1 (Mean age = 10;3; DLD N=27; TLD N=40) novel words and manipulated the presentation of the word and referent to occur simultaneously or sequentially. For both groups, sequential exposure improved children's accuracy in identifying the correct referent and form of each word. These outcomes have clinical implications: A simple, no-cost change in teaching (naming the referent just prior to showing the referent) enhances the early stages of word learning. Taken together, these studies demonstrate associations and dissociations between phonology and semantics during word learning for children with DLD that are sometimes similar and sometimes dissimilar to their peers with TLD.

Interactivity across semantic, phonological, and articulatory levels as children learn words

Authors: Lisa Goffman; Sara Benham

In classic accounts of word learning, meaning is mapped to phonological and then to articulatory levels. Children with developmental language disorder (DLD) may show deficits at all levels, but particularly in word form learning. We will present a series of studies showing that there is significant interactivity across processing levels in children with DLD and with typical development (TD). We use a paradigm in which children are asked to produce novel two syllable phonologically complex (e.g., "puvgub") nonwords or words. Children initially produce these sequences as nonwords, after which varying degrees of semantic content are incorporated. When 4- and 5-year-old DLD and TD children learn novel word forms, the inclusion of a semantic referent results in decreased variability in the implementation of speech motor templates, suggesting interactivity across semantic and articulatory levels. In another study, we show that, for children with DLD but not TD, syllable sequences become more stable when a semantic referent is included; semantic information provides a bootstrap for word form learning by inducing increased organization of syllable sequences. Thus, in the initial mapping of word forms to referents, both phonological and articulatory production levels are enhanced. We also asked about more protracted learning in which children return for additional sessions. Children with DLD continue to show deficits in word form, as indicated by decreased accuracy and increased intra-word variability in comparison with typical peers. However, counter to our predictions, the inclusion of increasingly complex semantic information leads to increased errors in children with DLD. In summary, word learning is a complex and interactive process, with semantic cues affecting how novel word forms are produced over time. Word form learning deficits are hallmarks of DLD, and the inclusion or exclusion of semantic cues influences the malleability of learning.

Phonological and semantic interactions in typical and atypical language development

Authors: Sara Benham; Lisa Goffman

When children learn new words, they must map a sequence of sounds to a meaningful referent. For many children, this process unfolds relatively seamlessly over time. However, for preschoolers with developmental language disorder (DLD), integrating novel sound sequences with a semantic referent leads to difficulties in sound accuracy. In this work, we examine the relationship between form production and a semantic referent by analyzing not only phonetic accuracy, but other aspects of phonology such as the organization of phonetic features and syllable sequences. We have applied tools from network science that are rooted in a graph theoretic approach to determine developmental change in phonological organization as toddlers and preschoolers map word forms to referents. We will present findings from a series of studies in which children between the ages of 2 and 8 years with typical and atypical language development produce novel disyllabic words, some that are paired with a consistent visual referent, and some that are not. Using a combination of novel network science analyses and standard phonological measures, we show that, for preschoolers with DLD, the incorporation of a

referent with a novel word form induces the production of stable syllable sequences, but does not affect segmental or phonetic feature accuracy. Typically developing children who are 2 years old show a different pattern of results: sound feature accuracy is disrupted by a referent, but not syllable organization. These findings elucidate how sounds and referents interact within the mental lexicon, and also point to new directions in our understanding of the phonological factors underpinning word learning. We show how the study of phonology across key developmental periods can be enhanced by tools of network science, providing new insights into the shifting organization of sounds and words.

Symposium: Language Acquisition in Real-World Contexts: Head-Mounted Eye Tracking in Diverse Populations

Speakers: Jennifer Sander; Yayun Zhang; Chen Yu; Hana D'Souza; Caroline Rowland

This symposium is aimed at understanding how children's real-time attentional abilities constrain language development across different populations, communication modalities, and learning contexts using head-mounted eye-tracking.

How does shared book reading support language development?

Authors: Yayun Zhang; Thalassia Kontino, Utrecht University; Caroline Rowland, Max Planck Institute for Psycholinguistics; Chen Yu, The University of Texas, Austin

"Shared book reading positively affects language development by providing children with types of complex language that might be otherwise rare. However, because children's earliest input is likely too full of unknown words to attract and maintain enough attention necessary for learning, the causal pathways of this positive relationship are not well understood. In this study, we examined how children process diverse linguistic input from a book-reading context by analyzing real-time information processing and how parent and child jointly create interactional routines to achieve joint focus and maintain the attention necessary for learning.

We conducted a dual head-mounted eye-tracking study to investigate how toddlers learn the correct word-object mappings by attending to the right object at the moment of parent naming in shared book reading. Specifically, we investigated (1) linguistic constructions in object naming utterances generated by parents; (2) whether gestures from both parent and child influence the linguistic constructions of parent speech and (3) how gestures play a role in directing the child's attention to the named referent.

We collected 45 book reading sessions from 16 parent-child dyads (M= 19.03 m.o.) and found that parents used a mix of simple and complex grammatical constructions, with a preference for subject-predicate forms (67%). Gestures, whether from parents or children, did not significantly affect the grammatical constructions used in parent speech. However, gestures successfully directed the child's attention to the named objects.

Our findings suggest that book reading offers toddlers a linguistically diverse environment for language development. This diversity is advantageous as it provides children with more opportunities to gradually build the multi-layered structure of language. Gestures, in particular, offer a helpful pathway for learners to connect words to objects, facilitating real-time language comprehension. This study sheds light on how dyads coordinate various information sources during shared book reading to support language learning."

Quantifying the input of early word learning to children with and without ASD

Authors: Chen Yu; Julia Yurkovic-Harding, University of South Carolina; Daniel Kennedy, Indiana University

"The success of early word learning relies on children's ability to associate the words they hear with the objects or events they see. When hearing an object label in parent speech, looking at the right referent at the right moment allows children to build correct word-referent mappings. In the current research, we aim to quantify and compare the differences among children with and without ASD in directing their visual attention to select the correct referents.

We recruited 60 young children (M=23.3 mo, SD=5.8; 17 with ASD and 43 without ASD) and their parents who were asked to play with a set of 24 unfamiliar toys in a home-like environment. We used head-mounted eye tracking to record child gaze direction when parents spontaneously named toy objects. In a 3-second window beginning at the onset of a parent naming event, the proportion of time that child gaze was directed to the parent-intended referent was measured.

There were 1246 naming events from children without ASD and 423 from children with ASD. For children without ASD, their attention to named objects across all naming events forms a bimodal distribution. For much of the 3-second window after a naming event, children without ASD either looked to the intended referent or, equally often, looked to some other object. For children with ASD, their attention across all of the naming events forms a skewed distribution. Among 60% of naming events, children with ASD didn't attend to the target object at all. Only within 20% of naming events, they spent over 50% of time attending the target object. The marked differences among children with and without ASD suggest that differences in visual attention while hearing parent speech may play a critical role in vocabulary development, via selecting and altering the word-referent statistics that children perceive in everyday contexts."

Sensorimotor patterns of parent-child interaction during word learning in Down syndrome

Authors: Hana D'Souza; Kate Mee, Cardiff University; Catalina Suarez-Rivera, New York University & UCL; Chen Yu, The University of Texas at Austin

"A lot of our knowledge about how young neurodiverse children develop language currently comes from screen-based tasks, standardized tests, or parental reports. Less is known about children's everyday learning experiences, where parent-child interaction is at the core. During this free-flowing activity, parents direct or react to their child, while their child—who is often surrounded by interesting objects and in pursuit of their own goals—directs, reacts to, or ignores the activity of their parent. What sensorimotor patterns (e.g., looking, object handling, speech) define this rich context? In order to understand this, we need to step into children's shoes and experience the world as they do. Recent technological advancements allow us to do this by enabling us to transition from traditional screen-based eye-trackers to head-mounted eye-trackers/cameras. This technology has already provided us with insights into the dynamic interplay between various components of parent-child interaction in typically developing children, challenging fundamental assumptions about the sensorimotor properties of language development (e.g., how much the child looks at faces). However, much less is known about neurodiverse children. This is the first study to use the same technology with young children with Down syndrome.

Fifteen children with Down syndrome aged 3-5 years, and 15 typically developing children matched on ability level, took part in this head-mounted eye-tracking study of parent-child interaction with novel objects and their labels. The interaction data was coded frame-by-frame and analysed for looking behaviours, object handling, and parental speech. The sensorimotor properties of these interactions will be discussed in the context of the strengths and difficulties young children with Down syndrome experience, as well as large individual differences we observe. We hope this research will inform our theories of language development as well as provide insights for parents and practitioners into how to better support young children with Down syndrome."

Through the Eyes of the Learner: Attentional Dynamics in Signed and Spoken Parent-Child Interactions

Authors: Jennifer Sander; Dilys Eikelboom, MPI for Psycholinguistics; Yayun Zhang, MPI for Psycholinguistics, Caroline Rowland, MPI for Psycholinguistics

"Joint attention (JA) plays an important role in spoken language acquisition. However, signed language input looks very different to spoken language input and only very few studies have examined the effect this has (e.g. how signing children focus and sustain their attention during naturalistic interactions, how this affects language development).

Among the few sign language studies examining real-time attentional behaviors, it has been found that signing children and caregivers are more sensitive to gaze cues of their communication partner and spent more time in mutual gaze than speaking dyads, with a higher frequency in gaze shifting (Lieberman et al., 2011 & 2014). However, these studies used videos of naturalistic interactions recorded from an observer's perspective. Less is known about the perspective from first-person view, which is an important perspective because it uniquely accounts for the visual perspective of each interaction partner.

To provide such a fine-grained measure of naturalistic interactions we plan to investigate gaze behaviours in signing as well as speaking dyads with children between the age of 1 and 5 years using head-mounted eye tracking in a mobile lab. This allows us to test a larger number of participants in a three-folded comparison: 1) cross-modal, 2) cross-developmental, 3) cross-contextual.

We predict that signing dyad interactions will have different characteristics than those of speaking dyads to accommodate the visual, as opposed to auditory, modality (e.g. have more frequent gaze shifting and shorter periods of JA and mutual gaze). However, in both speaking and signing dyads, we expect JA success to increase with children's age, and we expect children which navigate the interaction most efficiently to display the biggest vocabulary growth. Our study will contribute new insights into what characterises a language learning facilitating environment, and which different interaction strategies can lead to successful language acquisition."

Symposium: Why does social contingency matter for language learning?

Speakers: Elena Luchkina; Morgane Jourdain; Gideon Salter; Elizabeth Che

This symposium focuses on a crucial component of social interaction – contingency – that facilitates language development explores the underlying mechanisms of this effect across languages, SES, and typical and atypical populations.

Mechanisms underlying the effects of social contingency on word learning in the first year of life

Authors: Elena Luchkina; Fei Xu

"We investigated the role of socially contingent interactions between typically developing infants and their parents in early vocabulary development. Convergent evidence from prior research shows that infants of parents are more likely to engage in socially contingent interactions with their infants tend to have larger vocabularies. An open question is how social contingency facilitates vocabulary growth.

One possibility is that parents who speak in response to their infants more often produce larger amount of language input, which could accelerate vocabulary growth. Another possibility is that the properties of socially contingent language input are uniquely suitable to support early word learning. Yet another possibility is that the frequency of parents' contingent responses helps infants build a link between their own words or vocalizations and others' behaviors, leading to further language advances, including vocabulary growth.

To distinguish between these hypotheses, we analyzed relations between parent-infant interactions when infants were 9 and 12 months and their vocabulary size at 12 months. Our findings suggest that the frequency of both verbal and non-verbal responses to infants' vocalizations facilitate vocabulary development longitudinally. Our findings also suggest that this development is unlikely to be due to the amount of language input or the properties of language within socially contingent interactions. Follow-up work explores whether and how contingent responses indeed help infants infer the communicative nature of language and how this inference facilitates vocabulary growth."

Simplification in contingent child-directed speech is the result of responsive alignment

Authors: Morgane Jourdain; Sabine Stoll

"Child-directed-speech (CDS), particularly interactive exchanges, crucially predict language learning. Emerging evidence suggests that contingent CDS, responsive to a child's utterance, is simpler compared to CDS in general. The underlying mechanisms of this complexity matching remain unclear. We ask: is this adaptation limited to CDS, or does it reflect a broader mechanism inherent to human communication?

To test this, we compare contingent, non-contingent CDS, and contingent and non-contingent adult-directed speech (ADS) in naturalistic corpora of three languages with complex verb morphology: Chintang (Sino-Tibetan, Nepal), Qaqet (Baining, New Guinea) and Turkish (Turkic, Turkey). We measure verbs' complexity both in length, in number of morphemes, and in diversity of form, measured with the Gini index that determines the skewness of the distribution of verb forms.

Study 1 shows that in all three languages verbs are shorter and have fewer forms in contingent than in non-contingent CDS, but that verbs are not simpler in non-contingent CDS than ADS in all languages. This highlights the specific role of contingency on simplification in CDS. Study 2 further reveals a correlation between verbs and utterance length in contingent CDS and the child's prior utterance. This could entail that simplification in contingent CDS is the result of the adults aligning to the complexity of child speech. Child speech production serves as a gauge that adults use to base the complexity of their CDS. Study 3 demonstrates a similar effect of contingency on complexity matching in ADS.

Because ADS shows the same processes as CDS, we propose that responsive alignment is a general property of language interaction. For the language learning child it has a beneficial effect because adults utilize it to adapt their own speech, aligning with the child's linguistic abilities. This adaptation facilitates effective communication and, in turn, enhances learning outcomes."

Effects of promoting caregiver responsiveness on early communication and language: An RCT

Authors: Gideon Salter; Colin Bannard, Silke Fricke, Penny Levickis, Julian Pine, Kiera Solaiman, Emma Thornton, Danielle Matthews

"This study tested whether it is possible to mitigate the risk of language delay associated with social disadvantage by promoting caregiver linguistic responsiveness. In doing so it assessed a) the causal role of social contingency in language learning and b) the potential value and acceptability of low-intensity digital interventions.

435 families with infants aged 4-10 months at baseline participated from their homes across the four nations of the UK (postcodes in the lowest 5 deciles of the national Index of Multiple Deprivation). Families were randomly assigned to either a language intervention promoting responsive linguistic interaction or a matched physical health intervention, both of which involved receiving three text messages a month with links to short parenting-focussed videos. Analyses were pre-registered.

The language intervention led to a significant increase in overall caregiver linguistic responsiveness as measured by the PaRRiS at 12, 17 and 24 months. It also led to increased infant communication at 12 months and increased caregiver responses to infant communication. It did not lead to a significant increase in caregiver-reported expressive vocabulary at 17 or 24 months (primary outcome measure, N = 399, 400). Blind coding of home videos suggested a significant increase in expressive vocabulary at 17 and 24 months (N = 123, 154). Questionnaires and focus groups suggested the intervention was acceptable to parents (although one requested more support for children with developmental delay).

Overall, the findings indicate that relatively low-intensity interventions can promote caregiver responsiveness and this appears to have a causal effect on infant prelinguistic communication. More support would be needed to promote vocabulary development. More detailed coding of changes in specific developmentally-attuned response types and of focus groups suggest a promising avenue would be to provide one-to-one support for families at higher cumulative risk. We are currently exploring the feasibility and acceptability of such an option."

Using CHIP to Explore Effects of Overlapping Word Usage on Early Language Development

Authors: Elizabeth Che; Patricia Brooks

fast mapping, the ability to establish a rapid audio-visual label-referent association from minimal exposure, is connected to word learning and can enhance lexical growth around 2 years of age. For congenitally deaf infants, late access to auditory inform

Symposium: Interventions that Improve Vocabulary and Narrative Skills in Ethnically and Linguistically Diverse

Speakers: Diana Leyva; Si Chen; Sarah Surrain; Vibeke Grover; Catherine Snow

This symposium discusses four innovative interventions designed to improve preschoolers' vocabulary and narrative skills, while targeting ethnically and linguistically diverse communities in both the U.S. and Norway.

Empowering ethnically diverse parents to support preschoolers' language skills while cooking

Authors: Diana Leyva; Sofina Shekhar, Eden Galan, and Shante Antrom

Decontextualized talk (DT) is talk that goes beyond the here and now (e.g., talking about past events; Snow, 1983). Promoting DT in preschool is important because it predicts children's academic achievement in middle school (Uccelli et al., 2019). Literacy Eats is a culturally responsive intervention program designed to empower low-income and ethnically diverse parents in using DT at home while cooking with children. Literacy Eats was co-developed in partnership with a community organization, where parents learned to use DT while cooking simple recipes and watched video clips of real families using DT while cooking. This study evaluated the feasibility of Literacy Eats using a pre-post-test design. Participants were 37 low-income, ethnically diverse parents (32% Black/African American, 27% Latino/Hispanic, 27% Asian, 5% White and 9% other; 46% spoke a language other than English at home) and their preschoolers (M age = 54.7 months; 60% girls) living in a northeastern U.S. city. We examined associations between program attendance frequency and improvements in: (a) children's vocabulary and narrative skills and (b) the frequency of parent-child participation in food-related activities (e.g., cooking and eating together). At both pre-test and post-test, we assessed children's vocabulary using the IDELA expressive vocabulary items, their narrative skills through a personal narrative task, in which the child told two stories (which were transcribed and coded for elaboration and lexical complexity), and the frequency of parent-child participation in food-related activities using a parent questionnaire. Parents who attended more Literacy Eats meetings had children with greater improvements in vocabulary and narrative skills from pre-test to post-test. However, increased attendance in the program did not necessarily relate to an increase in parent-child participation in food-related activities from pretest- to post-test. Literacy Eats is a promising culturally responsive program that supports low-income and ethnically diverse parents in fostering preschoolers' language and literacy skills.

Enhancing narrative skills of young children by sustaining preschool impacts

Authors: Si Chen; Olivia Horne, and Catherine E. Snow

"The Expanding Children's Early Learning (ExCEL) project is a collaboration between MDRC, Boston Public Schools, the University of Michigan, and Harvard Graduate School of Education that aims to examine several approaches to sustaining children's preschool achievement. In Boston Public Schools, ExCEL has an excellent opportunity to evaluate whether a preschool program combining evidence-based curriculum with coaching and professional development for teachers, as well as alignment of instruction across elementary schools, is likely to result in sustained improvements in student outcomes. ExCEL seeks to generate rigorous evidence to guide the development and delivery of early childhood education on a large scale by harnessing the commitment to expand early childhood education.

The current study included 284 3-to-4-year-old children in the Boston Public School Prekindergarten program (29.6% Black, 25.3% Hispanic, 19.7% White, 14% Asian, 5.6% multiracial, and 5.6% other; 57.8% monolingual (English) and 42.3% bilingual (English and other language). Half of the classrooms were randomly assigned to ExCEL and the other half were randomly assigned to a control (business-as-usual) condition. We investigated whether ExCEL improved children's narrative skills at post-test. Children's narrative skills were assessed at post-test using the Renfrew Bus Story narrative retelling task (Renfrew, 1969). In this task, children heard a story and were prompted to retell it using illustrations as support. Children stories were scored for inclusion of information, sentence length, and the amount of prompting required, using an adapted version of the examiner's manual (Cowley & Glasgow, 1994). We found that ExCEL had moderate but significant positive impacts on children's narrative skills at post-test (effect size = 0.17). We discuss the differences in effect sizes among different racial and linguistic groups."

Effects of Play/Learning Strategies for Spanish-dominant Latine Families in Reading and Free Play

Authors: Sarah Surrain; Susan Landry, Tricia Zucker, and Yoonkyung Oh

The way parents respond to their child's initiations and guide their learning in informal settings is associated with children's subsequent language development. However, less is known about the efficacy of responsive parent interventions for families from diverse linguistic and ethnic backgrounds. This study is a secondary analysis of a randomized controlled trial of the Play and Learning Strategies (PALS) intervention, which facilitates parents' learning of responsive parenting strategies via online modules, 1-on-1 coaching, and video reflections. Parents of preschool-aged children (M age = 52.8 months) were randomized to PALS or a control condition and observed interacting with their child in two settings – book reading and free play – before and after the intervention period. The current study examines the effect of PALS on targeted parent behaviors (e.g., Responsiveness, Language Building Strategies) and child behavioral outcomes (e.g., Language Use, Engagement) for three subgroups: Spanish-dominant Latine families (n = 142), English-dominant Latine families (n = 112), and English-dominant non-Latine families (n = 137). Spanish-dominant Latine parents received PALS in Spanish, while the other two groups received PALS in English. There were significant, moderate-to-large, main effects of PALS on parent and child behaviors during the book reading for all three subgroups. However, PALS effects varied by group for parent and child behaviors observed during free play. The Spanish-dominant Latine parents experienced larger gains in parent and child outcomes when observed in the free play setting, compared to the other two groups. These differential effects were not explained by the number of completed sessions or coach-rated engagement but may be related to differences in family composition and/or cultural orientations toward book reading vs. free play activities. Our results highlight the importance of observing multiple contexts in research with families from minoritized backgrounds and inform the development of new parent interventions that build on families' strengths.

Dual-language learners demonstrate longer-term narrative effects of a shared-reading intervention

Authors: Vibeke Grover; Jan-Eric Gustafsson, Veslemøy Rydland, and Catherine Snow

"In this presentation we examine the longer-term effects of taking part in a shared-reading intervention in preschool and at home. The study included 464 dual-language learners, 3-5 years old, who lived in Norway and spoke several different first languages at home. The best represented first languages were Urdu, Somali, Polish and Arabic. The 123 classrooms that the children attended were randomly assigned to either an experimental condition, in which the children received a shared-reading intervention in preschool and at home or a control (business-as-usual) condition. We assessed children pre-intervention, post-intervention and seven months post-intervention. We asked whether there were longer-term effects of receiving the intervention on second-language vocabulary and narrative skills and used second-order latent growth modelling to answer the question.

During the intervention year, children shared several books with their teachers who all spoke Norwegian. The teachers were asked to discuss targeted words, invite child reasoning, and explore ideas through questions. Additionally, parents at home shared some of the books read in preschool, using their preferred language. These books were mostly wordless, depicting a narrative through pictures. We found immediate effects of the intervention on children's second-language vocabulary skills, but not on their narrative skills. Seven months later we identified a remaining, but somewhat fading effect on vocabulary skills and an emerging effect on narrative skills, a skill that may take time to develop.

Children shared the same books with different interlocutors, in different settings and in both of their languages, requiring them to take into consideration the perspectives of their reading partners and various interpretations of the books. The discussion will focus on how these specific features of the intervention may have contributed to the longer-term emerging effects on narrative skills."

Symposium: Individual differences in the heritage language development of school-age children

Speakers: Johanne Paradis; Silvina Montrul; Jacopo Torregrossa; Evangelia Daskalaki; Adriana Soto-Coromins

Bilingual children are at risk for HL attrition after school entry. Research on factors that determine successes and challenges in the development and maintenance of HLs is presented from North American and European contexts.

L1 Text Experience Contributes to Individual Differences in the Acquisition of Spanish Passives

Authors: Silvina Montrul; Andrew Armstrong

"Most research on the development of heritage Spanish in children is grounded in comparisons between heritage speakers (HSs) and age-matched Spanish monolinguals. However, this comparison overlooks variability in Spanish outcomes among HSs themselves, and fails to consider input and other individual factors that contribute to these differences. To understand the sources of this variability, we investigated Spanish textual input as one contributor to individual differences in the acquisition of complex syntax in 8-12-year-old children's heritage Spanish in the United States by testing their production of verbal passives and other complex structures on a sentence repetition (Srep) task. 25 HS children attending English-only schools and 25 HS children attending dual-immersion schools completed tests for Spanish literacy (5), rapid automatized naming, and working memory. The SRep task targeted (im)plausible verbal passives, a structure frequent in written language, and actives, in addition to other morphosyntactically simple or complex structures.

Dual-immersion school HSs scored higher than English-only school HSs on all literacy and working memory measures ($p < .001$). On the Srep task, structural accuracy was significantly more likely for HSs in dual-immersion schools and with higher reading vocabularies. Descriptively, the decrease in accuracy from actives to passives was smaller for the dual-immersion school group (98% to 84%) than the English-only school group (82% to 38%). Comparing all simple and complex structures found a significant school × complexity interaction ($p < .05$) such that the negative impact of syntactic complexity on repetition accuracy was greater for English-only school HSs.

The results indicate that school-age HSs with higher levels of Spanish literacy have stronger morphosyntactic representations which results in more accurate production of complex structures. This provides evidence of text experience as an important factor that leads to individual differences in the oral production of school-age child heritage speakers."

The role of literacy for the acquisition of difficult structures in Portuguese heritage language

Authors: Jacopo Torregrossa; Cristina Flores, Esther Rinke

"Most research on heritage language (HL) acquisition have examined either early stages (Meisel, 2019) or ultimate attainment (Benmamoun et al., 2013; Polinsky et al., 2019). By contrast, very few studies have analyzed HL acquisition among school-age children (Torregrossa et al., 2023). This age is crucial because HL children are usually exposed to literacy in the societal language and not the HL. We investigate which linguistic phenomena in the HL pose particular difficulties to school-age children and how far language- and literacy-exposure variables affect their acquisition.

We tested 180 HL children/adolescents (age range: 8;06-16; M: 11;07) speaking Portuguese as a HL and French, German and Italian as societal languages. We used parental questionnaires to collect information on their language and literacy exposure. The children were tested in Portuguese by using a cloze-test targeting linguistic structures of different levels of complexity and a written narrative task (Schneider et al., 2006). We identified the linguistic structures that posed more difficulties to the children by considering response accuracy in the cloze-test. Then, we examined whether these structures were produced accurately in the written narratives. We interpreted the results through the lens of language- and literacy-exposure variables.

Based on a cluster analysis of the cloze-test data, we identified 15 (out of 40) complex structures, including third-person clitics, relative pronouns and concessive connectors. Children's response accuracy with these structures was affected by literacy-exposure variables. Preliminary results of a cluster analysis conducted on the narratives showed that the narratives exhibiting the most complex structures were produced by older children and children with a greater amount of formal instruction in the HL. Quantity of exposure to the HL did not affect the results in either case.

This study points to the importance of literacy exposure in the school-age period for acquiring and maintaining complex phenomena in the HL."

The role of attitudes, home language use and schooling in Mandarin heritage language development

Authors: Evangelia Daskalaki; Johanne Paradis, Adriana Soto-Corominas

"A growing number of studies show that the amount of HL use at home as well as the amount and type of HL schooling are predictive of children's HL performance. In the present study, we extend this line of research by asking (i) how these factors are shaped by maternal attitudes towards HL transmission (distal factors, in Paradis 2023, terms); (ii) how they affect vocabulary and syntax, and (iii) how they interact with each other.

To this end, we tested 46 Mandarin-English bilingual children in Canada (Mean Age=10.5; Range=6.8-16.2). The children were divided into three groups based on the school they attended: children (N=10) in English-only school, children (N=15) in English-Mandarin bilingual school, and children (N=21) in English-only school who attended heritage language classes on weekends. Children were administered a picture-naming task targeting Mandarin vocabulary (LITMUS-CLT) and an experimental elicitation task targeting Mandarin interrogative sentences, which is an early acquired structure. Parents were administered a questionnaire about home language environment, attitudes towards Mandarin transmission, and education program choices.

First, regression analyses showed that positive maternal attitudes were associated with more Mandarin use at home. Second, more Mandarin use at home was associated with larger vocabularies and more accurate production of interrogatives. By contrast, school type was only associated with vocabulary: children attending a bilingual school performed better than the other groups. Third, an interaction between school type and home language use showed that the positive role of Mandarin use at home was less pronounced for children attending bilingual schools than for those in English-only schooling.

Taken together, these results show how attitudinal factors may influence input factors, which in turn, may differentially affect the acquisition of vocabulary versus early-acquired syntactic structures. Results also suggest that schooling in the HL is protective against variation in HL use at home"

Minority languages under the microscope: Influences on the development of Catalan object pronouns

Authors: Adriana Soto-Corominas; Silvia Perpinan

"Most studies investigating variability in heritage language (HL) development focus on immigrant contexts, where the quantity and quality of the HL input is limited. This study investigates the development of direct object pronouns in Catalan, a minority language in Catalonia (Spain) in contact with Spanish. Despite being a non-immigrant HL subject to protective policies, such as being the language of schooling, Catalan is learned in intense contact with the majority language, and adult speakers have been shown to not converge on the same end-state grammar (Perpiñán, 2017). However, little is known about the sources of variation in the development of Catalan and national minority languages more broadly.

Catalan-Spanish bilingual children ages 4-8 (N=333) completed an oral production task eliciting three direct object pronouns in Catalan: accusative masculine l, neuter/unspecific ho, and partitive n. Whereas Spanish has a pronoun to carry out the functions of l and ho, partitive n is equivalent to morphological ellipsis (i.e., null pro). Parents completed a questionnaire that yielded information on participant/family demographics and their linguistic environment.

We used regression to investigate the effect of pronoun (l, ho, or n), age at testing, Catalan age of onset, home language use, Catalan nativeness of input providers, and frequency of Catalan-rich activities on the target production of the pronouns. Four predictors were associated with the outcome: age, language use, nativeness of input providers, and the target pronoun itself.

Results showed that the development of Catalan direct object pronouns is subject to similar processes that influence acquisition in immigrant HLs: bilinguals acquiring the minority language under reduced input and low-quality conditions show protracted development, especially with respect to the only pronoun without an overt counterpart in Spanish. Importantly, results reveal that factoring in the quality of the input is crucial in studies of national minority languages."

IASCL 2024 Symposia: Friday Noon

07/19/2024, from 11:00 AM to 01:00 PM , Room P131

Symposium: Collaborating with parents to support the language and communication of children with Down syndrome

Speakers: Susan Foster-Cohen; Tamar Keren-Portnoy; Sue Buckley; Vesna Stojanovik; Kelly Burgoyne

The five studies in this symposium explore the value of learning from parents as observers of their children's language development, and as collaborators in the development and implementation of interventions from infancy to school age.

Using the Babbleplay App to promote vocalising in babies with Down syndrome

Authors: Tamar Keren-Portnoy; Sue Buckley, Kelly Burgoyne, Helena Daffern, Mona Kanaan, Laura Boundy, Sab Arshad

Infants with Down Syndrome tend to vocalise less than typically developing infants (Parikh & Mastergorge, 2018). Given that earlier babbling correlates with earlier word production in typically developing infants (McGillion et al., 2016), it is predicted that actively encouraging infants with Down syndrome to babble more would have positive outcomes for early lexical development. Moreover, given the dose effects of intervention for children with Down syndrome found by Yoder et al. (2014), it is predicted that approaches that can deliver intensive doses of babble encouragement would be particularly effective. To achieve high dose input, we piloted a novel parent-led intervention that uses an app, BabblePlay, developed by our team (Daffern et al., 2020). BabblePlay responds to children's vocalisations with moving shapes on a screen that are designed to attract and hold the child's attention and provide encouragement to vocalise. The app records their vocalisations, measures the timing of their vocalisations, and counts their frequency. We will report on a proof-of-concept pilot with a group of infants with Down syndrome (n = 29) aged 0;7-1;3. The aim was to test whether the infants engaged with the app and whether parents found it easy to use. Each infant played with a mirror 5 times one week and with BabblePlay 5 times the following week, for 5 minutes each time. Parents video recorded the final session of each week. Assessment of engagement with BabblePlay was sought through parental questionnaires as well as analysis of the videos, coding for number and duration of looks to the screen. We also compared the amount of vocalisation when playing with BabblePlay versus playing with the mirror. Interim findings suggest a positive impact of BabblePlay in terms of quantity of vocalisation indicative of its potential as an intervention to promote vocalisations and lexical development. We will end by reporting on plans for a feasibility Randomised Controlled Trial of BabblePlay with infants with Down syndrome.

Babble Boot Camp for infants with Down syndrome – a proactive, parent led approach

Authors: Sue Buckley; Beate Peter, Jennifer Davis, Laurel Bruce, Linda Eng, Nancy Potter, Mark VanDam, Lauren Thompson, Lizbeth Finestack, Susan Loveall

Children with Down syndrome are at high risk of significant speech and language delays and the need for intensive intervention from birth is indicated since the foundations for both speech and language are being laid from the first weeks of life. Babble Boot Camp (BBC) is a programme of activities and routines designed to boost the speech and language skills of any child at risk of delays when challenges are predictable at birth. A paediatric speech-language pathologist (SLP) implements the intervention via parent training, using a telehealth platform. In weekly meetings, the SLP coaches parents in techniques designed to boost children's communicative skills beginning in earliest infancy. The intervention typically spans ages <6 months to 24 months. It has been evaluated in an implementation with children with classic galactosemia and outcomes include more advanced babble skills and higher speech and language skills at follow-up, compared to standard care. Given that babies with Down syndrome are identified at or before birth, this programme offers the opportunity to intervene proactively and is predicted to be of value to their development. A pilot evaluation of BBC with 10 families with infants with Down syndrome (4 to 16 months at start) has been underway since September 2022 and was at the midpoint at time of abstract submission. Families are receiving 10 months of weekly intervention sessions and then monthly sessions to 24 months. Outcome measures include implementation fidelity, detailed measures of phonological and language development using LENA recordings, IPA transcriptions, and the MacArthur-Bates CDI, as well as parent feedback on their experience with the intervention. Child results and parent feedback mid-intervention indicate positive outcomes on all measures and results of the full implementation, currently being completed, will be presented. Plans for a full RCT study will be described.

Evaluating an early social communication intervention for young children with Down syndrome

Authors: Vesna Stojanovik; Emma Pagnamenta, Sarah Sampson, Rachel Sutton, Benjamin Jones, Victoria Joffe, Kate Harvey, Elena Pizzo, Sarah Rae

While aspect of social skills are often more preserved in Down syndrome than other aspects of language development (Fidler, 2005), capitalising on that base as a support for language development requires interventions specifically designed to promote the links from social skill to language skill (Mattie & Fanta, 2023). This presentation reports the results of a feasibility trial of a parent-delivered social communication intervention for young children with Down syndrome ('ASCEND') focused on developing children's early social communication skills through responding to shared attention. The study used a two-arm feasibility randomised controlled trial (RCT), with 1:1 randomisation stratified by trial site, comparing the ASCEND intervention plus standard care and provision of standard care only. Nineteen children with Down syndrome aged 0;11 - 2;11 months took part (n=10 in intervention group, n= 9 in control group). Pre and post intervention and 6-month follow-up assessments included language, social communication skills, adaptive behaviour, quality of life (parents and children), parental anxiety and depression. Data were collected on recruitment and retention, standard care, treatment fidelity, acceptability of the intervention by the parents and speech and language therapists, feasibility of collecting health economic measures and suitability of the primary outcome measure. The intervention (manual, support, materials) was positively received by the participating parents. The children in the intervention group were reported to have significantly higher vocabulary measured on the Reading Communicative Development Inventory (Hamilton et al., 2000) and also had a higher communication subdomain score on the Vineland Adaptive Behaviour Scale (Sparrow et al., 2016). Speech and language therapists also evaluated the acceptability of the intervention positively. Treatment fidelity and retention were acceptable. The preliminary health economic data suggest that this intervention will be low cost.

Development and Evaluation of a Parent-Delivered Early Intervention for Children with Down Syndrome

Authors: Kelly Burgoyne; Kirstie Hartwell, Rebecca Baxter, Vesna Stojanovik , Emma Pagnamenta

Children with Down syndrome have significant language learning difficulties that require support from an early age to reach their full potential. While parents are well-placed to provide this support, they often need guidance, resources, and support to do so. This presentation describes the development and evaluation of an early language intervention for 3-6 year old children with Down syndrome, designed for parents to deliver to their child at home. The programme is based on Parents and Children Together (PACT), an evidence-based language intervention, originally developed for typically developing children at risk of language delays, which leads to gains in language and literacy skills (Burgoyne et al., 2018). In Stage 1 of the project, we worked closely with six families with children with Down syndrome to pilot and adapt the intervention using a mixed methods approach. Families completed 15-25 sessions of the programme over 5 weeks. All families reported enjoyment of the programme and children's active involvement; observations of delivery further highlighted positive features as well as adaptations to enhance delivery and engagement, including ways to support non-verbal participation. Following adaptations, families completed 13-20 sessions of the adapted programme. Parents reported children were more engaged and actively participating and that delivery was easier and more enjoyable than in the original version. Stage 2 of the project is a feasibility randomized controlled trial (September 2023-December 2024) that will determine the feasibility of a definitive trial of the adapted intervention programme. The results from the Stage 1 pilot will be presented as well as progress to date on the Stage 2 RCT.

Language and language use in children with Down syndrome: Individual and group trajectories

Authors: Susan Foster-Cohen; Jayne Newbury, Toby Macrae

Children with Down syndrome find the acquisition of some aspects of communicative development more difficult than others. For example, aspects of pragmatics may be easier while aspects of linguistic resource development (e.g. morphology) are reported to be more difficult (e.g. Roberts et al 2007). Less is known, however, about how the development of pragmatics and linguistic resources pattern in relation to each other over time: whether there are moments where the development of linguistic resources outpaces the capacity to use them or whether there are aspects of pragmatics that might be delayed due to a lack of resources for expression. To explore this question in preschool children, this study used parent observational data from the Communicative Developmental Inventory (Fenson et al 2007) and the Language Use Inventory (O'Neill, 2009) collected by the mothers of 34 children at six-monthly intervals from 30 to 66 months. Using mixed effects regression modelling in R (Bates et al. 2015), we modelled the relationships between language resources (vocabulary and morphosyntax) and language use development over time with a focus on both group trends and individual differences. While language use development appeared to be ahead of linguistic resource

development at most time points, we also found important individual differences as well as an early prevalence of language resources over language use at the earliest and the latest stages of development, independent of chronological age. Comparison of the children with Down syndrome with a group of 53 children with other causes of language delay and a group of 25 developmentally matched typically developing children showed similarities in the patterns of relationships suggestive of a delay rather than a disorder interpretation of the data. The results are important for clinical goal-setting as they can help determine when and where intervention energies might best be spent at different time-points.

Symposium: Romanian in the bilingual world

Speakers: Anamaria Bentea; Elena Soare; Bianca E. Babei-Popa; Mihaela Pirvulescu; Silvina Montrul

This symposium addresses questions related to variation and change in heritage languages, with special emphasis on the acquisition and development of various grammatical phenomena in heritage Romanian in contact with different societal languages.

Differential object marking in child heritage Romanian: on the role of linguistic proximity

Authors: Elena Soare; Alexandru Mardale, Larisa Avram

"In this study we investigate differential object marking (DOM) in child heritage Romanian in contact with a language which has and one which does not have morphological DOM: French and Spanish, with a view to shedding light on the role of linguistic proximity in heritage language acquisition.

We used an acceptability judgment task with 16 test sentences across 2 conditions balanced for animacy: DOM with proper names (PN) (obligatory with animate, incorrect with inanimate PNs) and DOM with definite common nouns (CN) (optional with animate, incorrect with inanimate CNs).

45 child heritage speakers of Romanian in contact with French and 45 in contact with Spanish (7- and 9-year-olds) took part in the study. Their responses were compared to those of 45 age-matched monolinguals living in the homeland. All participants accepted DOM with animate objects at high rates (between 75% and 93.3%) but also extended DOM to inanimates. The acceptability ratings are higher with inanimate PNs (between 40% and 63.3%) than with inanimate CNs (between 18.3% and 40%). No significant difference between the children living in France and those living in Spain was attested, with any age group (no significant combined effect of condition x group for either the 7-year-olds - $F(3,84) = 2.439$, $p > .05$, or for the 9-year-olds - $F(3,84) = 1.449$, $p > .05$). The monolinguals also accepted DOM with inanimate PNs (45%) but only at age 7.

These findings indicate that: there is no effect of linguistic proximity on the acquisition of DOM in heritage Romanian and full acquisition is slower under conditions of language contact. We argue that this extension does not reflect a deteriorated DOM system. It reflects an incipient change in Romanian, which favours expansion of DOM to inanimate objects. Retraction of this input divergent use is slower under conditions of reduced input."

DOM in heritage Romanian: Is language change accelerated under conditions of language contact?

Authors: Bianca E. Babei-Popa;

"Language acquisition can drive language change. Incipient changes tend to get amplified to rates higher than those in the input. According to some authors, such amplification is accelerated under conditions of language contact. Other authors argue that not every type of language change is amplified under conditions of language contact. In order to evaluate these views, I investigate differential object marking (DOM) in child heritage Romanian in Italy.

Romanian has two DOM markers: the functional preposition pe and clitic doubling (CD). The system is undergoing a diachronic change, from a system with two markers to one which uses exclusively CD. Following the view that language change is accelerated under conditions of language contact, child heritage speakers (CHSs) are predicted to opt for the innovative system and use CD as DOM at a level beyond the one in the input. In order to test this prediction, I examined DOM use in 52 'frog story' narratives told by Romanian CHSs living in Italy (age range 4;7–14;8). They are all simultaneous bilinguals. The data were compared to DOM use in the narratives told by 15 Romanian first-generation immigrants, 52 age-matched monolinguals and 20 Romanian adults living in the homeland.

Results indicate that CHSs use CD as DOM at a rate lower than 35% out of the total number of marked objects, in all age groups. This is significantly lower than the one with first-generation immigrants ($\chi2 = 31.79$, $p = .000$) and with child monolinguals ($\chi2 = 34.31$, $p = .000$). These results support the view according to which not every language change is amplified under conditions of language contact. I account for the lower rates of CD in child heritage Romanian in terms of the interface properties of this DOM marker, which signals D-linking, a property inherited from the clitic."

Heritage Romanian in the multilingual context: the acquisition of object clitic pronouns

Authors: Mihaela Pirvulescu; Virginia Hill

"This paper focuses on the acquisition of object clitic pronouns by 31 children (ages 8-17) who grow up in Toronto and are exposed to Romanian since birth (L1) in their home; this is the heritage Romanian (HR). These children are in contact with both English (the societal language) and French (the immersion schooling system). The investigation focuses on the use of single clitic pronouns, as in "L-am citit" 'it.CL-have.1 read'/'I read it'. Considering that the parametric setting for clitic pronouns (vs. lack of clitic pronouns) is well set in dominant Romanian (DR), the aim of the paper is to establish if the same parameter is also well set in HR.

Both comprehension and production were measured: results were compared between a Clitic Elicitations Task and a Comprehension Task (picture choice). The findings are the following: (i) The clitic parameter is well set in HR, i.e. the syntax of object clitic pronouns is well acquired. (ii) Both comprehension and production show morphosyntactic divergences with respect to the gender of the pronominal clitic and clitic omission; however, there is variation across the participants, with children who perform on target in both tasks, some children who only perform on target only on one task, and those who give divergent responses in both tasks. (iii) The variable performance of the participants ties with the external variables investigated, language experience and use predicting correct clitic comprehension while literacy predicting correct clitic production. Working memory and age are negatively correlated with clitic omissions.

Overall, the study highlights the strong similarity between the heritage and the dominant language in the domain of pronominal object clitics while, at the same time, confirming that in heritage language acquisition, target mastery of the morphosyntax is dependent on heritage language maintenance at home and in the heritage speakers community."

What's in a question? Comprehension and production of which-questions in child heritage Romanian

Authors: Anamaria Bentea; Theodoros Marinis

"This study compares the comprehension and production of which-questions in the Heritage Language/HL of early bilinguals and aims to understand whether online interpretation in both monolingually-raised and HL children is guided by the presence of morphosyntactic information like case-marking and/or number agreement and how this compares to production. Wh-dependencies in Romanian present morphosyntactic properties that lend themselves well to assessing the use of grammatical cues in comprehension and production: a Differential Object Marker/DOM, pe, precedes the wh-phrase in object questions and indicates that this element should be interpreted as object; number agreement on the verb disambiguates between a subject and an object interpretation. Thirty-one child HSs of Romanian with L2 German (5;6-10;0) and thirty monolingually-raised children (6;4-10;4) took part in a visual-world eye-tracking task and an elicited production task.

In the eye-tracking task, children saw pairs of pictures while listening to a which-question and had to choose the picture that matched the question. Eye-movements to 32 experimental trials and offline responses were recorded. In the elicited production task, children had to produce 32 subject and object which-questions. Our findings indicate that DOM on the wh-pronoun in Romanian does not eliminate the subject-object asymmetry found with which-questions in children. At a group level, HL children have more difficulties with the comprehension and production of object which-questions. Although number mismatch does not impact offline comprehension in either group, the online data suggest that this mismatch guides monolingual children's online processing of object-which questions more than DOM-marking on its own. The fact that the heritage children do not seem to recruit the number information in the online processing of a short syntactic dependency could indicate more protracted processing, i.e., the number information is processed after the end of the sentence because of slower processing speed."

Symposium: Where do new words come from?

Speakers: Kristen Gilyard; Kennedy Casey; Samantha Durrant; Yuchen Jin; Elika Bergelson

Children's vocabulary size and content is sensitive to their input environments—the frequency of words in directed, interactive input is a strong predictor of age of acquisition. But children's lexical knowledge is expanded and supported by a wide variety of other mechanisms beyond linguistic input frequency. In four talks on two languages (English, Tseltal) from three linguistic regions (Eastern US, Central UK, Southern Mexico), we explore how early lexical development is guided by everyday routines (bookreading), embodied experience (object handling), inferential meaning-mapping (novel word learning), and overhearable (i.e., non-child-directed) input. Presentation 1 describes a novel noun learning study in which young US English-learning toddlers (14–22mo) are exposed to new words via home bookreading. Both age and book familiarity play a role in their engagement and word learning—by 22 months toddlers repeat most novel words and, as they become more familiar with the books, vocally engage more. Presentation 2 uses a unique daylong photo stream corpus and parent-reported productive vocabulary data from Tseltal (Mayan; Mexico) children, showing that children's at-home manual activity reliably predicts the age at which children are typically reported to produce a word. Presentation 3 dives into real-time processing, testing how and when UK English-learning toddlers (18–30mo) identify, retain, and generalize object-label mappings discovered on the basis of disambiguation. Disambiguation ability was present already at 18 months (improving with age) and predicted both concurrent and future parent-reported productive vocabulary size. Presentation 4 combines daylong transcription data, age of acquisition estimates, and parent questionnaires (US English-learning children, 6–42mo) to examine which household object names are distinctly associated with overhearable input, opening opportunities for future work to test word recognition for primarily-directed versus -overheard words when controlling for frequency and interest. Together, these studies illustrate how new words enter children's worlds and how real-time, multimodal processing supports word learning.

Symposium: Children's multimodal development across approaches, methods and languages

Speakers: Aliyah Morgenstern; Pauline Beaupoil-Hourdel; Amanda Bateman; Sara Coego; Maria Graziano; Pilar Prieto

The panel presents how research in our field has developed theories and methods to analyze multimodal productions, using both naturalistic and experimental data. All participants discuss the necessity to use a variety of approaches.

A developmental perspective on multimodal negation in French speaking children

Authors: Pauline Beaupoil-Hourdel; Christelle Dodane, Aliyah Morgenstern

"First negative constructions take over from early forms of rejection and avoidance. From the end of their first year on, children can express negation with headshakes, palm-ups and index waves. Prosody and gestures are combined to convey refusals, protests, epistemic negations or powerlessness, sometimes before the emergence of first verbal negation markers. The expression of negation in longitudinal adult-child data is thus an excellent source to study multimodal language development. But tracing the transitions between modalities is quite complex. It is therefore crucial to analyze gesture and speech with an integrative approach.

We used ecological spontaneous data and mixed methods to analyze the longitudinal development of four French monolingual children recorded monthly at home with a parent for one hour between 1;0 and 4;0. We focused on the productions containing the word "non" (no). Prosodic properties were coded with PRAAT, actional and gestural behavior with ELAN, functional analyses as well as directional and temporal synchronization patterns were integrated in EXCEL.

Results of quantitative and qualitative analyses show clear evolutions in 3 phases. During phase 1, vocal productions of "non" were amplified at the prosodic level. Body movements were synchronized with intonation contours. During phase 2 "non" was mainly produced with rise-fall intonation contours and children used upper-body movements in close parallel with their prosodic contours. During phase 3, "non" was produced with flat or falling intonation contours and reduced syllabic duration. As their mastery of speech developed, children gradually resorted to more subtle multifunctional gesture-speech orchestration.

Gestures, body movements and prosody thus provide powerful resources for children to make their multimodal entry into language. They use each modality more and more skillfully thanks to adults' scaffolding in everyday life interactions. This study gives us insights on how children become experts in face-to-face social interaction, which is multimodal in nature."

Multimodal recruitments and offers of help in infant early childhood education mealtimes

Authors: Amanda Bateman; Amelia Church

"This presentation explores children's multimodal development from the perspective of ethnomethodology and conversation analysis (EMCA), which allows us to see how children use their bodies and voices to achieve particular social actions. Building on prior work exploring the social and linguistic practices in infant eating interactions (e.g. Wiggins 2023), we explore how mealtime interactions are managed as a collaborative, co-constructed activity between infants and early childhood teachers.

To illustrate how children achieve social actions – such as requests for assistance – we analyzed video data recently collected in an early childhood English-speaking setting in Mid-Wales. Our findings show that infant embodied displays of trouble communicate recruitment for assistance from the teacher, who responds with offers of assistance through gesture and by verbalising the infant's actions, therefore modelling language use. Importantly the children's actions are contingent on the educator responding in alignment with the child's intention.

Micro-analyses of the video data illustrate how infants recruit help through embodied 'showing' of an item (Kidwell & Zimmerman, 2007), which sets up a problem (as a first pair part) that needs a response from the teacher (as a second pair part), establishing joint attention. The teacher offers assistance in the shape of 'would you like me to [x]', and uses accompanying embodied gestures that uphold infant children's rights to choose, at their pace, when/if they want to receive help.

This presentation focuses on the interactional function of children's multimodality, how they use their bodies, gaze and gesture to enact agency and achieve particular social actions, such as requests. It also highlights teachers' multimodal scaffolding and reformulations. Implications for early childhood teacher practice and training, and the usefulness of an EMCA approach for analysing teacher-infant multimodal communication for future research will conclude the presentation."

Prosody and gesture to express focus types: a cross-sectional study using task-based measures

Authors: Sara Coego; Nuria Esteve-Gibert, Pilar Prieto

In adult speech, prosodic prominence and co-speech gestures are relevant cues to distinguish focus types (information, contrastive, corrective), and they are frequently combined into multimodal ensembles. Despite the contribution of both modalities to mark focus type, developmental research has mainly studied children's use of prosody independently from their gesture production. Esteve-Gibert and colleagues (2021) considered the use of both cues in distinguishing focus types and point towards a precursor role of head gestures in French 4- to 5-year-olds' speech. The present study has two main goals. First, to determine whether the seemingly precursor role of gestures in the marking of focus types can be replicated in earlier stages of acquisition by looking at a larger developmental window than in Esteve-Gibert and colleagues' study. Second, to investigate how the use of prosodic prominence and gestures interact in the creation of such complex pragmatic meanings as contrast and correction across age groups. A total of 120 Catalan-speaking children belonging to three age groups (3-4, 4-5, and 5-6) were video-recorded during an interaction-based semi-controlled task designed to elicit utterances in three focus contexts (information, contrast, and correction). Target productions were coded for perceived prosodic prominence using an adapted version of the DIMA system (Kügler et al., 2015). Visual data was coded for gesture presence. Preliminary results with 27 children showed, first, that both prosodic prominent patterns and gestures were used to differentiate focus types already at ages 3-4, showing no evidence of the precursor role of gesture. Words in contrastive and corrective focus contexts were prosodically more prominent and they overlapped more frequently with a gesture at all age groups. Secondly, a tendency to combine prosodically prominent words with gestures was observed across all ages and focus contexts. This study highlights how gesture and prosody must be analyzed together in child language development.

On the development of reference tracking in speech and gesture in Italian children's narratives

Authors: Maria Graziano;

"Reference tracking (who does what to whom) is a multimodal phenomenon - speakers can use both verbal referential expressions and gestures to track entities in discourse.

Studies have shown that the development of referential expressions can be influenced by several factors, such as language specificity and contextual constraints (De Weck, 1991; Hickmann 2003). Similarly, the ability to use gestures with different functions is linked to the development of discourse and pragmatic skills (Colletta, 2004; Graziano, 2009). The few studies looking at children's use of anaphoric gestures have produced divergent results, arguing either for a disambiguating function (Cristilli et al., 2010), or a more general late acquisition (Alamillo et al., 2010).

This study investigates the development of reference tracking in a pro-drop language (Italian) to observe whether and how gestures contribute to achieve referential cohesion in a narrative discourse. Analyses are conducted on elicited narratives produced by four-, six-, and nine-year-olds (11 per group). We examine how referents are introduced, maintained and re-introduced, and which type of anaphoric expression is used (pronouns, nouns and zero anaphora). All gestures identified are coded for function (referential vs. pragmatic; Kendon, 2004) and examined for whether they co-occur with an anaphoric expression.

Preliminary observations indicate that, in speech, four-year-olds tend to use more ellipsis than older children, where six- and nine-year-olds use more nouns phrases. The use of gestures with anaphoric functions appears in 6-years olds, in particular with abstract deictic gestures. Those results are in line with previous studies, indicating a late mastery of anaphoric devices (both in speech and in gesture). The present multimodal study of gesture alignment with different anaphoric expressions will shed light on whether and how the use of anaphoric gestures can depend on language-specific aspects, such as the possibility of dropping the subject which is a characteristic of Italian."

Individual oral presentations

Individual oral presentations: Wednesday Morning

Please note that the order of presentation within sessions will be different.

07/17/2024 from 10:30 AM to 12:30 PM , room P018

The interplay of grammatical gender and gender-stereotypical color in toddler word recognition

Nicole Altvater-Mackensen; Lisa Kohl; Nicole Altvater-Mackensen

"It has been shown that toddlers recruit stereotypical gender information during language processing: in a classical preferential looking task, they are faster to recognize a gender stereotypically colored object, e.g., a pink bib, if it is labeled by a gender-matching (female) compared to a mismatching (male) voice (Bacon & Saffran, 2022). The current study investigates whether color and grammatical gender information similarly interact during word recognition in German, a language with grammatical gender marking (e.g., der Hut – theMASC hat vs. die Kappe – theFEM cap).

We present word pairs differing in grammatical gender (feminine vs. masculine) in three different conditions in a preferential looking task with 3- to 6-year-old children and a comparable forced-choice task in adults: consistent trials present a stereotypical pairing of grammatical gender and object color (e.g., a blue hatMASC and a red capFEM); in inconsistent trials grammatical gender and object color oppose a stereotypical pairing (e.g. a red hatMASC and a blue capFEM); and in neutral trials the color of the objects is gender-neutral (e.g., a yellow hatMASC and a green capFEM). Based on previous work, we speculate that inconsistent trials will lead to disrupted word recognition compared to neutral trials while consistent trials will show improved word recognition compared to neutral trials.

Data collection for the child sample just finished (N = 26). Data from adults shows faster reaction times when grammatical gender match the stereotypical object color compared to when they mismatch (t (25) = -2.398, p = .024). The neutral condition showed in-between reaction times with no significant differences compared to consistent and inconsistent trials. So far, results suggest that linguistic (grammatical gender) and extra-linguistic (stereotypical color) information interact during word recognition, extending previous findings that listeners integrate a range of different linguistic and non-linguistic cues to facilitate language processing."

07/17/2024 from 10:30 AM to 12:30 PM , room P018

Early development of inferential comprehension in French-speaking preschoolers from the ELLAN study

Pamela Filiatrault-Veilleux; Audette Sylvestre; Chantal Desmarais

"Background: Inferential comprehension is a complex language ability fundamental for social competence and reading comprehension. Evidence from the literature demonstrate that inference generation develops early in a child's life. Additionally, recent findings report greater difficulties in inferencing in preschoolers with Developmental Language Disorders and young autistic children compared to same age typically developing peers when using narrative-based comprehension tasks. However, no longitudinal study has yet been conducted to investigate inferential comprehension development in young typically developing children.

Objective: Using a longitudinal design, this study aims to describe the development of inferential comprehension abilities in young typically developing French-speaking children from 42 to 66 months of age.

Methods: A narrative-based inferential comprehension task has been administered to a group of typically developing children (n=71-91) at 42, 54 and 66 months old; as part of the Early Longitudinal Language and Neglect [ELLAN] study. A total of 19 inferential questions were classified into six types of causal inferences targeting story grammar elements. Children's responses were scored on a quality continuum ranging from expected (3 points) to inadequate (0 point).

Results: Inferential comprehension total scores significantly improve between T1 and T2 and between T2 and T3 (p < 0.001). Results permit the description of a developmental sequence per inference types and a progression in quality of children's responses. By 54-month-old, children can answer inferential questions targeting the problem and solution of the story, as questions targeting the goal and internal responses are better answered at 66-month-old. At 42-month-old, children's responses to the inferential questions were scored as expected in a proportion of 10.9%, in comparison to 39.2% at 52-month-old and 52.0% at 66-month-old.

Conclusion: Such longitudinal data documenting an evidence-based developmental sequence of inferential comprehension is essential to design language intervention targeting receptive language of young children

experiencing language difficulties from an early age."

07/17/2024 from 10:30 AM to 12:30 PM , room P018

Feasibility of an online language intervention and the impact of dose frequency manipulation.

Pauline Frizelle; Eva McMullan; Darren Dahly; Eibhlín Looney; Ciara O'Toole; Nicola Hart

"Background: Few studies have explored the feasibility of online language interventions for young children with Down syndrome (DS). Additionally, none have manipulated dose frequency or reported on the use of music as a medium through which language and sign can be learned.

Aims: To 1) examine the feasibility and acceptability of an online language intervention for young children (1 – 3;06 years) with DS, and 2) compare effectiveness at two intervention dose frequencies.

Method: The study was carried out in two phases using a mixed methods design. Phase 1: qualitative data were gathered to examine feasibility issues when implementing a video-based language intervention at home. Phase 2: effectiveness of the intervention was examined comparing two groups, randomly assigned to a high and low intervention dose frequency. The Down syndrome Education checklists (combined) were the primary outcome measure. Process data were gathered to determine the acceptability of the intervention in practice and to identify factors that would improve successful future implementation. Acceptability data were analysed with reference to the theoretical framework of acceptability (V2).

Results: Forty-three parents completed the phase 1 survey, five of whom took part in the focus groups. Once weekly sessions in the morning were indicated as the preferred scheduling choice. Quantitative data were analysed using Beta regression adjusted for baseline scores and indicated better end-of-study outcomes in the low dose group. However, an exploratory interaction model suggested that the the efficacy of the high-dose intervention was higher in participants with higher baseline DSE performance (>6%). Parents perceived the intervention to be effective and noted a positive cascading effect on the family.

Conclusions: The results of this study add to our knowledge of real-world effective online-interventions and suggest a critical minimum language level is required for children with DS to benefit optimally from a higher intervention dose."

07/17/2024 from 10:30 AM to 12:30 PM , room P018

The Role of Infants' Point-Following on the Link between Mothers' Pointing and Infants' Vocabulary

Sura Ertaş; Ebru Ger; Sümeyye Koşkulu-Sancar; Aylin C. Küntay

"Parents' pointing predicts infants' language development. However, the relevance of infants' point-following skills in this predictive relation has not been studied. The present study examined whether mothers' pointing frequency at 12 months predicts their infants' receptive vocabulary at 14 months and whether infants' point-following skills at 12 months moderate this relationship.

We examined 42 Turkish-speaking mother-infant dyads when the infants were 12 and 14 months old. We measured mothers' pointing frequency using the decorated room paradigm (Liszkowski 2012) and infants' point-following performance using the point-following paradigm (Mundy et al. 2003), wherein two front and two behind trials infants were to follow the point to a picture hung on the wall. Given that the majority of infants could follow pointing in the front trials, we only focused on point-following in the behind trials. We categorized the infants as 'follower' if they succeeded at least on one of the behind trials, and as 'non-follower' otherwise. We assessed infants' receptive vocabulary using the Turkish Communicative Development Inventory-I at 14 months.

We regressed infants' receptive vocabulary scores at 14 months on mothers' pointing frequency at 12 months, infants' point-following category at 12 months, and their interaction. We found a significant interaction effect ($\beta=6.47$, 95% CI [2.14, 10.79], $p=.004$). Mothers' pointing frequency at 12 months was predictive of infants' word comprehension at 14 months only for infants who were 'followers' of pointing ($\beta=3.88$, SE$=1.57$, $p=.018$).

Our findings demonstrate the role of infants' point-following skills in the relationship between maternal pointing and infants' subsequent vocabulary. Infants who have advanced point-following skills might be better able to benefit from mothers' pointing to develop word comprehension skills, potentially by paying more attention to the pointed objects and to the labels or descriptions of these objects."

07/17/2024 from 10:30 AM to 12:30 PM , room P018

ManyBabies-AtHome Looking While Listening: An online, cross-linguistic word recognition study

Katie Von Holzen

"The majority of knowledge produced in developmental science comes from WEIRD countries (Western, Educated, Industrialized, Rich, Democratic; Singh et al., 2021), a bias which threatens to limit our understanding of the factors influencing early development. One promising solution to improve diversity, moving data collection to online, remote options, has so far not lived up to its promise, as the majority of online, remote studies are centered in the United States (Zaadnoordijk & Cusack, 2022). The ManyBabies-AtHome (MBAH) project aims to produce a resource-friendly, open-source, and accessible approach to make it possible for online studies to live up to their promise of increasing diversity (Zaadnoordijk et al., 2021). As a part of MBAH, the current study aims to investigate and establish best practices in the study infants' word recognition development using an online, remote version of the Looking-While-Listening paradigm (LWL; Fernald, Zangl, Portillo, & Marchman, 2008). Cross-linguistic studies using this paradigm are rare (e.g. Ramon-Casas et al., 2009) and experimental design and analytic decisions vary considerably between studies (Zettersten, et al., 2021), rendering comparisons difficult or even making them impossible.

We will discuss our project goals as well as the state of the project. Our goals are four-fold: 1) Societal: Attract a more diverse set of researchers and study populations using a linguistically-inclusive and resource-friendly approach; 2) Theoretical: Investigate the development of infant word recognition abilities in a linguistically diverse sample; 3) Methodological: Determine the comparability of results produced in-lab with online, remote implementations of the LWL paradigm; and 4) Scientific: Generate an extensive dataset to train automatic eye gaze algorithms and for future researchers to plan their studies. We plan to submit our Registered Report by early 2024 and will look to recruit researcher-collaborators from a wide variety of linguistic backgrounds at the IASCL 2024 Congress."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Studies too heterogeneous for meta-analysis? Try Bayesian evidence synthesis!

Elise van Wonderen; Mariëlle Zondervan-Zwijnenburg; Irene Klugkist

"In the field of child language, as well as in (experimental) psychology and linguistics more broadly, direct replications are rare and studies are often highly diverse in terms of their research design, participant characteristics or operationalization of key variables. This poses a challenge for quantitatively synthesizing results across studies, as the most popular method to do this (meta-analysis) requires conceptually comparable effect sizes with the same statistical form (e.g., Lipsey & Wilson, 2001). This requirement places considerable constraints on the studies that can be combined and entails that meta-analysis is sometimes not possible or that not all relevant studies can be included. In such situations, Bayesian evidence synthesis (Klugkist & Volker, 2023) may constitute a flexible alternative: this method combines studies at the hypothesis level rather than at the level of the effect size and therefore poses fewer constraints on the studies to be combined. An additional advantage is that Bayesian evidence synthesis allows for simultaneously testing multiple informative hypotheses that, unlike the conventional null hypothesis, can directly test a specific theory or hypothesis (Klugkist et al., 2005).

In this study, we introduce Bayesian evidence synthesis and show through simulations when this method diverges from what would be expected in a meta-analysis to help researchers correctly interpret the synthesis results. In our simulations, we investigated different scenarios by varying the number of studies synthesized, the studies' sample sizes and effect sizes, and the between-study variance in effect sizes. The simulations showed that Bayesian evidence synthesis converges on the same hypothesis as meta-analysis in most scenarios. However, when many of the primary studies are underpowered, testing against the null hypothesis can be problematic. In those cases it may therefore be better to either not use Bayesian evidence synthesis or to only test hypotheses that are not a null hypothesis."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Looking-while-listening validization study of the Czech CDI:WG and CDI:WS with 164 toddlers

Nikola Paillereau; Filip Smolík; Tereza Sloupová; Katerina Chladkova; Jiří Pešek; Tereza Fialová; Šárka Kadavá

"The MacArthur-Bates CDIs are assessment tools that have been validated through comparison with various measures. Some rare studies have established connections between parent-reported vocabulary and real-time measures of word comprehension using looking-while-listening.

To obtain validation data for the Czech CDI:WG and CDI:WS, we conducted a looking-while-listening comprehension experiment involving 164 Czech children. Three different versions of the experiment (40, 60, or 80 items), were presented using the Eyelink 1000+ eyetracker to four age groups: A) 7-10 months old (N=30), 40 items; B) 15-17 months old (N=42), 60 items; C) 18-19 months old (N=46), 60 items; D) 20-30 months old (N=46), 80 items. Children were shown a pair of pictures and heard a sentence containing a noun labeling one of the pictures. Each pair was shown twice, with each picture as the target once.

We present the following statistical analyses:

1. Permutation analyses: These examined the effects of vocabulary scores on the proportion of fixations on the target picture within each 100-ms time bin within 3 seconds after the word onset. In groups B, C, D, significant sequences were observed (B: 1.5-2.8s after word onset, p=0.008; C: 1.4-2.1s, p=0.034; D: 0.8-1.6s, p=0.018). In group A, no significant sequence was found.

2. Binomial Generalized Additive Mixed Models: These tested the interaction effect of time after word onset and the child's vocabulary on the probability of fixating on the target word. In all groups, this interaction was found to be significant with p<0.001. Increases in target fixations occurred faster in children with higher vocabulary scores in all groups, although the effects were more variable in younger children.

In sum, children with higher vocabulary scores exhibited faster or more frequent fixations on the targets, with some unexpected effects in the youngest group. This experimental study shows that the Czech CDIs are valid assessement tools."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Validation of computerised adaptive CDIs in Polish

Karolina Muszyńska; Grzegorz Krajewski; Piotr Król; Ewa Haman

"Communicative Development Inventories (CDIs) are widely used in research on language development in young children. However, CDI lists include hundreds of words and many attempts are made to create shortened versions. Computer Adaptive Testing (CAT) enables shortening a CDI while retaining its accuracy. In CAT, the participant is presented with one item at a time, and their response allows the CAT algorithm to estimate the language ability and choose the next item to re-evaluate this estimate.

Here we will present results from an ongoing validation study of two Polish CAT CDIs: Words and Sentences (WS) for parents of children aged 19-36 months and Words and Gestures (WG) for parents of children aged 16-18 months. The estimate from the CAT CDI can be correlated with the score from the full-item CDI. So far, parents of 88 children filled in both a full-item CDI and a CAT CDI (target sample is 100 children per CDI version). The testing is done online, with the use of a web app, and the time between the testings ranges from 1 to 10 days. Correlations between the score from the full-item version and the CAT CDI were: r = 0.89 for WS (n = 72), r = 0.81 for WG word understanding, r = 0.57 for WG word production, and r = 0.92 for WG gestures (however, the sample size for WG is currently relatively small, n = 16). The WS correlations are similar to those reported in the only other big-scale validation study so far (r = 0.86 for American English WS, Kachergis et al., 2022). We will also explore parental consistency in selecting particular words across the two versions and report discrepancies. Since the data will include both monolingual and bilingual children, we will also compare the CAT validity between the two groups."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Bilinguals reach language milestones at similar age as monolingual peers: a study on parental report

Karolina Muszyńska; Katie Alcock; Agnieszka Dynak; Nina Gram Garmann; Pernille Hansen; Napoleon Katsos; Joanna Kolak-Rodis; Grzegorz Krajewski; Magdalena Krysztofiak; Magdalena Łuniewska; Anna Sara H. Romøren; Hanne Gram Simonsen; Krzysztof Sobota; Ewa Haman

"AIM. Establishing developmental trajectories in bilingual language acquisition is crucial to determine which individual patterns are typical in the population. We investigate the age of reaching language milestones, i.e. the

age of babbling, producing first 1, 10, 50 words, combining words into sentences, in bilingual children from 0 to 3 years of age, and compare the age of reaching the milestones between (a) bilinguals and monolinguals, (b) across the two languages of the bilinguals.

METHODS. Information on the age of children reaching these milestones is gathered with a mobile app designed for the purposes of the study ("StarWords - every word counts") in which parents provide information on their child's development and enter gestures, words and utterances their child produces.

RESULTS. Final results of the project are based on 302 bilingual children (with Polish as L1, various L2s, living outside of Poland) and 302 matched Polish monolingual children, from 0 to 3 years. We found that bilingual children reached all the reported milestones at a similar age to their monolingual peers. We also compared bilingual children in the age of reporting their first word and first 10 words in L1 (Polish) or L2 (English / Norwegian / other). Bilinguals did not differ in the mean age of first word nor 10th word in their two languages. We also evaluate the usefulness of online data collection methods to study early language development. For example, though over 6,000 users downloaded the app, some comparisons (especially in L1 vs. L2 of bilinguals) could not be performed due to low user retention.

CONCLUSIONS. Our results confirm, on a relatively big sample and with a wide range of investigated milestones, that typical bilingual development may follow a similar trajectory as monolingual development. They also show the opportunities and challenges of data collection using mobile apps."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Peer interactions in linguistically diverse toddler groups: A social network study

Anne-Mieke Thieme; Sible Andringa; Josje Verhagen; Folkert Kuiken

"Peer interactions contribute to young children's linguistic, social and cognitive development (Coplan & Arbeau, 2009). However, the literature suggests that multilingual children might experience fewer peer interactions in early childhood groups, especially if they have lower majority language proficiency or communicative competence (Dominguez & Trawick-Smith, 2018; Van der Wilt, 2018). They might instead be able to connect with same-language peers (Halle et al., 2014; Kyratzis, 2010). Research in linguistics has long recognised the importance of social networks (Milroy, 1980), but few studies have used the latest advances in social network analysis to statistically model the structure of a social network. The goal of the present study was to use these novel techniques to examine how toddlers' linguistic repertoires relate to who they interact with and how much.

We observed 17 linguistically diverse playgroups for toddlers (2-3 years old) in the Netherlands. A specifically developed social network analysis app (CSNA) was used to assess with whom children interacted, and for how long. Alongside the app, multilingual parent and teacher questionnaires were employed to gather background information about the children and groups. The data were analysed with novel generalized exponential random graph models (Cranmer, Desmarais & Morgan, 2021). Our preliminary results, based on 11 playgroups (604 dyads), showed large variation between groups. In some groups, children with higher Dutch proficiency or communicative competence had more peer interactions, while in other groups, we did not find such effects. In some groups, children played more with peers who had similar linguistic repertoires, while in other groups, the reverse was true. We will discuss factors that may have led to these results, such as centres' language policies and group composition. We will also discuss how the latest advances in social network analysis open up new possibilities for researchers in child multilingualism, and linguistics more broadly."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Who's next? Turn anticipation in Dutch preschoolers with and without Developmental Language Disorder

Imme Lammertink; Caroline Rowland; Marisa Casillas

"By age two, children are remarkably good conversationalists: in overheard conversation, they spontaneously predict upcoming responses (Casillas & Frank, 2017; Lammertink et al., 2015), indicating sophistication with tracking conversational structure. However, children are not born with this ability and we do not yet know how they learn to recognize when and how a response is needed. In particular, we do not know how children's developing linguistic knowledge impacts their real-time prediction of conversational structure. We examined this issue with Dutch-acquiring children—typically developing (TD) and with Developmental Language Disorder (DLD)—to ask how lexicosyntactic (subject-verb inversion, question words; Studies 2 and 3), prosodic

(rising vs. falling intonation; all studies), and epistemic (first vs. second person subject pronoun; Study 1) cues influence children's turn-taking predictions.

We tracked the eyes of 445 Dutch-learning children as they watched short cartoon dialogues (Study 1: N = 320 TD children at 12, 24, 36, and 24 months, 80 per age-group; Study 2: N = 106 TD children at 48 months; Study 3: N = 19 children with a suspicion of DLD at age 3 and N = 19 age-matched TD controls). Participants saw dialogues in Dutch (all studies) or Jabberwocky Dutch (Studies 1 and 2), in which content words were replaced with legal nonsense words.

Children with and without DLD anticipated more speaker switches for questions than non-questions, demonstrating that both groups use subject-verb inversion and rising intonation to predict conversational structure (Studies 1 and 3). Study 1 additionally showed that TD children's use of epistemic cues to predict conversational structure may rely on semantic context: in real Dutch, but not Jabberwocky, TD children anticipate speaker switches more often after hearing a second- versus first-person pronoun. Study 2 analyses are underway. We discuss the theoretical and clinical implications of these outcomes."

07/17/2024 from 10:30 AM to 12:30 PM , room P104

Learners restrict their linguistic generalizations using preemption but not entrenchment

Ben Ambridge

"A central goal in the study of child language is explaining how, when learners generalize to new cases, they appropriately restrict their generalizations to avoid producing ungrammatical utterances (e.g., *The clown laughed the man). The past 30 years have seen an unresolved debate between statistical preemption and entrenchment as explanations. Under preemption, the use of a verb in a particular construction (e.g., *The clown laughed the man) is probabilistically blocked by hearing that verb other constructions with similar meanings ONLY (e.g, The clown made the man laugh). Under entrenchment, such errors (e.g., *The clown laughed the man) are probabilistically blocked by hearing ANY utterance that includes the relevant verb (e.g., by both The clown made the man laugh AND The man laughed). Across five artificial-language-learning studies with adults and children, we designed a training regime such that learners received evidence for the (by the relevant hypothesis) ungrammaticality of a particular unattested verb/noun+particle combination (e.g., *chila+kem; *squeako+kem) via either preemption only or entrenchment only. Three studies focussed on overgeneralizations of causative-marking verb argument structure (e.g., The man laughed / *The clown laughed the man / The clown made the man laugh); two on morphological overgeneralizations of plural marking (e.g., one mouse / *two mouses / two mice).

Across all five studies, participants in the preemption condition (as per our preregistered prediction) rated unattested verb/noun+particle combinations as less acceptable for restricted verbs/nouns, which appeared during training, than for unrestricted, novel-at-test verbs/nouns, which did not (i.e., strong evidence for preemption; all Bayes Factors > 10). Participants in the entrenchment condition showed no evidence for such an effect (and in 3/5 experiments, Bayesian evidence for the null). We conclude that a successful model of learning linguistic restrictions must instantiate competition between different forms ONLY where they express the same (or similar) meanings."

07/17/2024 from 10:30 AM to 12:30 PM , room P131

Morpho-Syntactic Abilities of Heritage Bilinguals and Monolinguals: Is the Role of Age Overrated?

Petra Schulz; Christos Makrodimitris

"Our study examines the role of chronological age for the morpho-syntactic abilities of heritage Greek children compared to their monolingual peers. While there is consensus that development is generally connected to chronological age, its significance for heritage language (HL) development is unresolved. Morpho-syntactic abilities have been shown to improve with age in monolingual and in child L2 acquisition. HL learners, acquiring their L1(=HL) in a bilingual context, should show the same pattern, but findings are mixed. It has been argued that later exposure to the societal language, often captured as Age of Onset of bilingualism (L2-AoO), is more crucial in HL development than age: a higher L2-AoO should boost HL development, because the initial period of exclusive HL exposure allows learners to stabilize their HL abilities.

To evaluate the importance of age (vs. L2-AoO), we compared HL to monolingual children, comprising the same age range, 6-12yrs. 52 HL-Greek children (L2-AoO: 0;0-6;9 years) and 60 monolingual Greek children were tested with the Greek LITMUS sentence repetition task (SRT), targeting central morpho-syntactic

structures. Children also completed a forward digit-recall task, to see how SRT is effected by short-term memory.

Separate GLMMs showed that Age and digit-recall predicted SRT-performance in the monolingual group, while in the HL-group SRT-performance was predicted by L2-AoO and digit-recall, but not by age.

The monolingual and HL children were very similar: they acquired the same L1, came from the same age group, and their performance was partly modulated by short-term memory. Nevertheless, we found that chronological age drives the acquisition of morpho-syntax in monolinguals, but not in HL-children. The later their exposure to the societal language, the better the HL abilities, and this effect was independent of age: thus, the role of age for HL children is overrated. We will discuss implications for the role of cumulative input."

07/17/2024 from 10:30 AM to 12:30 PM , room P131

Oral narrative development in school-age learners of Mandarin

Xuening Zhang; Ziyin Mai

"Studies on development of narrative skills in children have documented clear age effects in both monolinguals and bilinguals, yet the findings have mostly focused on Indo-European languages and children aged 3 to 7 (e.g., Bonifacci et al., 2018). This gap motivates this exploratory corpus study on narrative development of school-age Mandarin learners in Hong Kong, investigating how narrative skills could be predicted by lower-level language skills such as phonological awareness, vocabulary, and grammar.

The sample comprises 788 Hong Kong Mandarin learners aged 8-14, who performed in timed narrative tasks (picture-based storytelling/personal recounts) as part of a widely taken Putonghua proficiency test: 279 younger primary students (Mage = 9.20), 413 older primary students (Mage =10.45), and 96 secondary students (Mage = 12.73). Narratives were analyzed for macrostructure based on story grammar, for general microstructure by computing the total number of words (TNW), number of different words (NDW), and mean length of utterance in words (MLUw), and for fine-grained microstructure based on 17 structures of Mandarin outlined in Hao et al. (2019).

A preliminary analysis revealed stability of macrostructure across three age groups, consistent with previous findings of adult-like macrostructure performance in most 9-year-olds. Significant development was observed for microstructure measures heavily reliant on lexical skills (i.e., TNW, NDW, locative phrase, adjective, adverb, resultative verb compounds) between younger and older primary groups. Additional significant improvement in secondary schoolers was found only for resultative verb compounds, probably attributable to the inherent complexity of this structure which requires cumulative experience with Mandarin over school years. Meanwhile, scores in independent pronunciation, vocabulary choice and grammatical judgment tasks in the same proficiency test consistently predicted narrative outcome measures. Our findings contribute to a comprehensive understanding of narrative development in school-age Mandarin learners, providing the missing link between preschool and adult narrators."

07/17/2024 from 10:30 AM to 12:30 PM , room P131

Within and Across-Language Priming Trajectories Across Development in a Structurally Biased Language

Alina Kholodova; Michelle Peter; Caroline Rowland; Gunnar Jacob; Shanley Allen

"Abstract priming is the tendency to reproduce previously heard structures (Bock, 1986) and is enhanced when the verb is repeated across prime and target (i.e., lexical boost; Pickering & Branigan, 1998). Further, priming can lead to structural adaptation across time (i.e., cumulative priming; Jaeger & Snider). However, there is extremely little research on these core effects across development in bilingual children both within and across languages as well as conflicting research in monolingual children. Besides, we lack research on these effects in languages where the two structural alternatives behave differently in bias strength leading to prediction error for infrequent structures (Chang et al., 2000; 2006).

In the present study, we studied core priming effects across growing age (3-4, 5-6, 7-8 and adults) in German speakers (N=193), in bilingual German speakers with a different L1 (N=164) within German and extended this study to prime English-German speaking bilinguals across the two languages. The participants described video clips with double object datives (Dora sent Boots the rabbit – DO) or prepositional object datives (Dora sent the

rabbit to Boots - PO). Crucially, in contrast to English, German is a DO biased language in which children hardly ever produce POs.

Within German, we found adaptation effects immediately and across time for the PO (but not for the DO) structure across all age groups in both monolingual and bilingual children with the highest effects in the youngest children due to more prediction error (in line with Chang., 2000; 2006). The lexical boost effect emerged across development. Preliminary results for priming from English to German in adults (N=25) show the opposite pattern: more adaptation for the DO structure which is the somewhat less preferred option in English and surprisingly no lexical boost effect. We intend to discuss our results within the framework of current priming accounts."

07/17/2024 from 10:30 AM to 12:30 PM , room P131

The mechanisms underlying learning to listen and read in two languages

Kristi Hendrickson; Hector Sanchez-Melendez; Stephanie De Anda

"Adult bilinguals demonstrate non-selective lexical access (e.g., Dijkstra, & Van Heuven, 2022); upon hearing a Spanish word (e.g., dormir), Spanish-English bilinguals co-activate words that begin the same within a language (e.g., dorar) and across languages (e.g., doorway). However, extant research focuses on spoken words. Little is known about cross-language activation during reading. Moreover, although extant literature focuses on adults who have mastered reading in one or two languages, it remains unclear how children navigate cross-language competition when they are actively learning to read. The current study evaluates within- and cross-language lexical co-activation in the spoken and written modalities in adults vs. children.

Spanish-English bilingual adults (n=30) reported currently using both languages with equal frequency, whereas children (n=21) reported using English more often. Using eye-tracking in the Visual World Paradigm (Allopenna et al., 1998) participants heard or saw a word and clicked the corresponding picture from a display of four: the target, a cross-language competitor, and two unrelated items. The difference in peak looks to competitors vs. unrelated items was evaluated.

For spoken words, adults showed cross-language activation only when listening in English (p=.006), whereas children showed cross-language activation only when listening in Spanish (p=.01). For written words, adults did not demonstrate cross-language competition in either language, whereas children showed cross-language competition when reading in Spanish (p=.003).

Results suggest that bilingual children activate their dominant language (English) while listening and reading in their non-dominant language (Spanish). However, highly proficiency adult bilinguals who currently use English and Spanish with equal frequency showed less evidence of cross–language activation and only in the spoken modality. Implications for theories of bilingual representation will be discussed."

07/17/2024 from 10:30 AM to 12:30 PM , room P131

Autonomy in the development of the uvular rhotic in French-Portuguese bilingual children

Leticia Almeida; Rodrigo Pereira

"The literature on bilingual language development often reports cases of cross-linguistic interaction (CLI) of the two languages being acquired. CLI can manifest itself in 5 different ways: concerning rate of acquisition, delay or acceleration of the age of acquisition of a structure have been reported. Concerning phonetic realization, CLI may appear as transfer, merging or deflecting (Kehoe, 2015).

In this paper, we investigate possible CLI outputs in the development of the uvular rhotic in the bilingual acquisition of French and Portuguese. The uvular rhotic has several phonetic variants in both languages and different distributional properties: it can appear in clusters in French whereas only the tap can appear in clusters in Portuguese.

Ten French-Portuguese bilingual children, aged between 3;6 and 4;3, participated in our study. Their elicited productions were collected using two picture naming tasks from the Cross-Linguistic Child Phonology project, namely the European French and the European Portuguese versions, containing 14 rhotics in singletons and 18 in clusters in French; 11 rhotics in singletons and 44 in clusters in Portuguese.

We argue that the development of the rhotic shows nos signs of CLI: the uvular rhotic is acquired in French in singletons by all the children whereas only three children have mastered /r/ in singletons in Portuguese. In

clusters, the development of the rhotic is also more advanced in French than in Portuguese, as expected according to the literature on L1 development. Additionally, the children exhibit several phonetic variants, the uvular voiced fricative being the most common in both languages, following adult output in each language. In clusters, we found that only one child systematically transfers the uvular French rhotic into her Portuguese productions. We thus argue that CLI does not systematically occur in the speech of bilingual children and that it can be child-specific."

07/17/2024 from 10:30 AM to 12:30 PM , room P200

How Do Children Distribute? – Evidence from Mandarin Chinese

Yixuan Yan

"While sentences like (i) "three boys are holding two balloons" are interpreted with both collective reading (CR) and distributive reading (DR) in English, there are claims that sentences like (i) in Mandarin would have CR only (Lin 1998, a.o.). In this study we suggest an alternative proposal that both CR and DR are possible in Mandarin, but DR is eliminated by pragmatics in adults. Here we consider children's interpretations of such sentences to provide evidence supporting the latter perspective.

Compared to adults' preference for CR, English-speaking children are highly receptive to both CR and DR of (i) (Syrett & Musolino 2013); and such tolerance has been attributed to their grasp of overt number-morphology (Syrett & Musolino 2013) or less reliance on subject-verb agreement (Drozd et al. 2017). For Mandarin-speaking children, (a) their DR is predicted to be delayed because Mandarin lacks plural marking and subject-verb agreement; (b) they have not yet mastered pragmatics like adults, so we predicted that they are likely to accept both CR and DR.

Five- to six-year-old Mandarin children (N=20; 5;0–6;9, Mage=5;9) and adults (N=14) participated in a within-subject TVJT. Two types of contexts where CR and DR are true respectively match with three sentences like (i). The results show that while adults accepted CR for (i) significantly more than DR (p < .001), neither reading did children exhibit a significant preference for (no delay was found in DR), they exhibited a comparable tolerance like English-speaking children for both readings regarding (i).

Our hypothesis about the interpretations of (i) in Mandarin adults is confirmed by a follow-up adult Sentence-Rating Task. It shows that adults in fact accepted DR when the implicature is not available (N=34, p < .001). It thus can be concluded that children's tolerance stems from their inability to deduce the CR-only implicature."

07/17/2024 from 10:30 AM to 12:30 PM , room P200

How children wonder about facts

Ondřej Drobil; Klára Matiasovitsová; Anežka Kuzmičová; Anna Čermáková

"Stimulating children's wonder at the real world is paramount to creating engaging literacy materials and pedagogies across school subjects. But how is wonder manifested in children's language? Our paper will explore this while following the distinction between 'efferent' (learning about the world) vs. 'aesthetic' (affective engagement) stance. Furthermore, we will examine how wondering about facts relates to imagining (i.e., mentally representing alternative realities) as gleaned from specific linguistic markers (e.g., conditionals or conjunctions expressing causal relations).

Twenty Czech-speaking children (10 boys and 10 girls; aged 9-11 years) participated in the study. Children were interviewed about their interest in various non-fictional topics (e.g., animals, technology, space, fashion) and about the various activities (e.g., reading, viewing, talking, playing) through which they nurture their interests. The recordings were transcribed according to the standards used in spoken corpora of the Czech National Corpus. The recordings are transcribed and manually annotated for language of affective engagement and evaluative language (aesthetic stance), language of knowledge and thinking (efferent stance), imaginative language, as well as the associated use of conditionals and causal conjunctions.

We will use a clustering method to group individual turns based on the occurrence and co-occurrence of language of wonder and corresponding features (e.g., "what I might start to enjoy is probably gardening, because it's also interesting to investigate just how the plants develop and differently just what they're made of and stuff.") and then explore variability among different children and interview phases quantitatively and qualitatively. The frequency of each category will be compared to the dataset of the SCHOLA corpus (the corpus of spoken language used during lessons in schools, 1M tokens).

Focusing on children's language of wondering about facts, we are opening a virtually new research territory, one directly relevant to educational and other practice."

07/17/2024 from 10:30 AM to 12:30 PM , room P200

Children's visual attention when planning informative multimodal descriptions of spatial relations

Dilay Z. Karadöller; Aslı Özyürek; Ercenur Ünal

Children acquiring spoken languages often do not use informative expressions in their speech when describing spatial relations even around 8 years of age, especially for Left-Right. At these ages, they use under-informative descriptions in speech (e.g., Side) but use iconic gestures that disambiguate these descriptions together with their speech (Karadöller et al., 2022). Previous research with adults showed that visual attention to event components changes when describing missing information in speech via gestures (Ünal et al., 2022). Here, we aim to investigate whether children's visual attention to spatial relations also differs when planning descriptions in speech vs. speech-plus-gesture in describing Left-Right relations between objects. Twenty monolingual Turkish speakers saw 84 displays with four pictures of the same two objects in various spatial configurations (e.g., Left-Right, lemon right to box; In-On, lemon on box). They described the target picture, indicated by an arrow, to a confederate. Participants' eye movements were recorded prior to descriptions. Descriptions with specific spatial nouns (e.g., Left) were coded as informative in speech. Descriptions with general spatial nouns (e.g., Side) accompanied by spatial gestures that disambiguated the relative locations of the two objects were coded as informative with gesture. The remaining descriptions were under-informative (e.g., Side). A glmer model showed that (1) children had more fixations to target pictures when planning informative descriptions compared to under-informative descriptions (β=0.515, SE=0.131, p<0.001); (2) within informative descriptions, they had fixations to target pictures when planning descriptions that are informative with gesture compared to informative in speech (β=-0.827, SE=0.171, p<0.001). Summarizing, children allocate more visual attention to spatial relations when planning informative descriptions and when the disambiguating information is conveyed multimodally. These results extend previous literature by showing that visual attention changes in relation to both the informativeness of the message and the modality of the description in children.

07/17/2024 from 10:30 AM to 12:30 PM , room P200

An Examination of Peer Influences on Narrative Development in Pre-Kindergarten Story-Sharing Circles

Kiren Khan; Liza Ashe; Abby Hultquist; Addy Mitchell; Esther Ballesteros; Olivia Freeman; Sophia Nappi; Kendall Dobie

There is growing evidence that peer relationships and interactions in a classroom context support children's problem solving, creativity, as well as their language development. However, the specific mechanisms through which peer interactions support children's language and narrative skill development in early childhood is less well understood. The present research examines how the nature and frequency of peer interactions during small-group, story-sharing circles implemented in prekindergarten classrooms influences children's progress in their narrative skills. Findings from two separate studies will be presented to address the following empirical questions: (1) How does peer engagement, indexed by peer interactions and group laughter during story-sharing circles, relate to gains observed in narrative skills across 12 small group, story-sharing circles? (2) Are differential narrative and language gains observed in story-sharing circles encouraging friendship and peer interactions compared to those emphasizing active listening? In Study 1, 20 children (M = 62.35 months, SD = 4.57) participated in a total of 12 story-sharing circles over four weeks. Each circle group of about 5 children was led by a trained research assistant and was prompted to take turns sharing stories about negative emotional experiences. Results showed story circles with greater narrative gains had higher group laughter and engagement, with 2.5 times more task-relevant peer talk and twice as many supportive interactions. Study 2 involved 37 children (M = 59.65 months, SD = 4.77) assigned to either friendship or active-listening circles. A matched-control design ensured comparable age, gender composition, and baseline language and narrative skills across the two groups. Preliminary findings indicate that while both circle types made significant gains in story structure, differential gains were observed in linguistic complexity of stories for the two circles. Implications of this work on utilizing culturally-sensitive practices such as small-group, story sharing in supporting children's narrative and language skills will be discussed.

07/17/2024 from 10:30 AM to 12:30 PM , room P200

The effects of family, culture, and sex on linguistic development across 11 languages.

Paul Ibbotson; William Browne

Exploring language development from a multi-site cross-cultural perspective can reveal the factors that cause children to develop in similar ways and those that cause them to develop differently. Using a multilevel modelling approach, we explored three factors that are likely to explain a significant proportion of individual differences, and commonalities, in child language development: family environment, language environment and sex. Data consisted of naturalistic speech recordings of 80 mother-child pairs, totalling 2,282,353 utterances, divided across 11 different languages: Cantonese, English, Farsi, French, German, Hebrew, Italian, Japanese, Portuguese, Spanish and Turkish. Using Mean Length of Utterance (MLU) as a measure of language skill, we found that family environment, language environment and sex all significantly explain individual differences in children's language development but do so in different ways: (1) After accounting for an overall linear growth, 24.3% of child MLU variance is due to language differences, 29.1% due to between child differences and 46.6% within children (2) individual differences in mothers' MLU significantly predicted individual differences in their children's MLU, particularly for younger ages (<3 years) (3) girls spoke with a higher MLU than boys of the same age and (4) across languages and families, children typically develop at the rate of 1 MLU per year, with an average MLU of 3 at 3-years-old. These findings are discussed with respect to the factors that cause children to follow different developmental paths and the implications for theories of language learning.

07/17/2024 from 10:30 AM to 12:30 PM , room P217

Social-Emotional Skills of Turkish-Speaking Children with and without Developmental Language Disorde

Nur Seda Saban-Dülger; Anja Starke

"Background: Children with developmental language disorders (DLD) show lower social-emotional skills than their typically developed (TD) peers, whereas children with challenges in language comprehension appear to be most significantly impaired. Evidence suggests that symptoms in different language domains result in different social-emotional impacts.

Aim/Objectives: This study aims to examine the relationship between social-emotional skills and language skills of Turkish-speaking children with DLD and TD language skills. It also investigates this relationship regarding receptive semantic and grammatical skills.

Methods: The study included children aged between 3-5 years with DLD (n=30) and TD (n=30). The children were grouped into age groups, with equal numbers of boys and girls in each age group. The language skills of the participants were assessed with the Test of Early Language Development 3rd Edition Turkish version. In contrast, the receptive morphosyntactic and semantic skills were examined with the subtests of Picture Vocabulary and Syntactic Understanding of the Test of Language Development Turkish Version. The maternal report on the Strengths and Difficulties Questionnaire (SDQ) was received to assess the social-emotional skills of the participants.

Results: Compared to the TD group, children with DLD exhibited lower receptive and expressive language skills and affected semantic and morphosyntactic comprehension skills. Similarly, the maternal reports on the SDQ indicated the impact of DLD on social-emotional development in the DLD group, although children with DLD in any age group did not reach the borderline scores. These results demonstrate the relationship between linguistic and social-emotional skills of Turkish-speaking preschoolers.

Conclusions: The correlation between linguistic and social-emotional skills has been observed in many studies; however, research on which linguistic domain plays the most influential role in this relationship has been limited. This study presents findings from Turkish-speaking preschoolers focusing on both general language skills and specific linguistic domains."

07/17/2024 from 10:30 AM to 12:30 PM , room P217

Sentence Repetition as a Diagnostic Tool for DLD: A Review and Meta-analysis

Leah Ward; Kamila Polisenska; Colin Bannard

"Background: Sentence repetition (SR) tasks are popular for use in language assessment as well as research. Performance on a SR task is viewed as a promising clinical marker of developmental language disorder (DLD). However, the ways these tasks have been designed and evaluated has varied considerably.

Purpose: We conducted a systematic review and multilevel meta-analysis examining the accuracy of SR tasks in distinguishing between typically developing (TD) children and children with DLD. It explores variation in the way that SR tasks are administered and/or evaluated and examines whether variability in the reported ability of SR to detect DLD is related to these differences.

Method: Four databases were searched to identify studies which had used a SR task on groups of monolingual children with DLD and TD children. Searches produced 3,459 articles of which, after screening, 66 were included in the systematic review. A multilevel meta-analysis was then conducted using 46 of these studies. Multiple preregistered subgroup analyses were conducted in order to explore the sources of heterogeneity.

Results: The systematic review found a great deal of methodological variation, with studies spanning 19 languages, 39 SR tasks, and four main methods of production scoring (sentence binary, sub-sentence binary, target binary, and error scoring). There was also variation in study design, with different sampling (clinical and population sampling) and matching methods (age- and language-matching). The overall meta-analysis found that on average TD children outperformed children with DLD on the SR tasks by 2.08 SDs. Subgroup analyses found that effect size only varied as a function of matching method and language of task.

Conclusions: Our results indicate that SR tasks can distinguish children with DLD from both age- and language-matched samples of TD children. The usefulness of SR as a clinical marker appears robust to most kinds of task and study variation."

07/17/2024 from 10:30 AM to 12:30 PM , room P217

Production of Relative Clause in Mandarin-Speaking Children with Developmental Language Disorder

Qi Qi; Ying Hao; Peng He; Dandan Liang

Relative clause (RC) is a complex syntactic structure that involves movement and recursion, so computations are needed to access nodes that are deeply embedded in the hierarchical structure (Computational Grammatical Complexity Account, CGC; van der Lely, 2005). A different framework is that these computations demand cognitive resources, in particular working memory (Dependency Locality Theory, DLT; Gibson, 2000). Children with developmental language disorders (DLD) have difficulties with RC and show a subject RC advantage is consistently demonstrated in European languages (Adani et al., 2014). RC in Mandarin is head-final, which is different from RC in most languages that are head-initial. Studies in typically developing (TD) Mandarin-speaking children present a subject advantage (Hu et al., 2015). However, there is a lack of research on RC in Mandarin-speaking children with DLD. The study attempted to bridge the gap by examining a) whether Mandarin-speaking children with DLD demonstrate difficulties in the production of RC, b) which framework provides a better explanation for the learning asymmetry. We recruited 16 Mandarin-speaking children with DLD (ages 8;7-11;8), 16 TD children (8;7-11;9), and 16 younger TD (TDY) children (6;2-9;5). They completed a sentence elicitation task and working memory tasks. The results showed children with DLD achieved lower scores than TD and TDY children in the production of both subject and object clauses. While the DLD (p<0.001) and TDY (p<0.001) groups demonstrated a subject clause advantage, the TD group didn't show such an asymmetry. Working memory didn't have a main effect on the production of RC. The results indicated that children with DLD showed difficulties in the production of RC. The subject advantage in DLD and TDY groups appeared to support the CGC, not the DLT. The lack of asymmetry in TD children may relate to that the group of children were older than TD children in previous studies.

07/17/2024 from 10:30 AM to 12:30 PM , room P217

Tracking Verbs Through Gaze: Unlocking Word Learning Challenges in Preschoolers with DLD

PEIYU LAI; Feng-Ming Tsao

"Preschoolers with Developmental Language Disorder (DLD) face challenges in vocabulary acquisition. Previous research predominantly focused on ""nouns,"" leaving a gap in our understanding of how DLD children acquire ""verbs."" This study bridges this gap by investigating verb learning difficulties in DLD children, specifically exploring nouns and verbs across word learning stages using explicit (pointing) and implicit (eye-tracking) methods.

The study involved 25 preschoolers aged 3-4 with DLD and a matched control group of typically developing (TD) toddlers (n=25). Novel words, including disyllabic nouns and monosyllabic verbs, were introduced to both groups—the word-learning tasks comprised training, word-referent selection, and retention. During training, children encountered novel words embedded in sentences and corresponding videos depicting nouns as

animated objects and verbs as actions. In the word-referent selection, children listened to the new words and pointed to the corresponding referents (objects for nouns and actions for verbs). The retention phase assessed whether children retained their understanding of these new words after a 5-minute delay. Gaze patterns were recorded using an eye tracker during the two phases.

Results showed that learning novel verbs presented a substantial challenge for all children [p < .01], with DLD children displaying significantly lower accuracy than their TD peers [p < .001]. The eye-tracking analysis (target-looking ratio) during word selection revealed an interaction effect between word class and group [p < .001], indicating a reduction in target-directed gazes among DLD toddlers when encountering novel verbs. Additionally, verb-related gaze patterns significantly correlated with word-referent selection accuracy in the DLD group. Specifically, gaze patterns in word-referent selection correlated with the accuracy of the DLD group in both noun and verb conditions.

In conclusion, findings revealed that both DLD and TD groups experienced more difficulty learning verbs than nouns, but the verb-noun learning difference was more prominent in the DLD group."

07/17/2024 from 10:30 AM to 12:30 PM , room P217

Assessing the Acquisition of Singular Agreement With an Online Version of Sentence Repetition Tests

Mya Taylor; Javier Aguado-Orea

From very early, children must understand the distinction between 3s present tense (she plays) and 3p (they play). As it is well known, although children seem to acquire verb number agreement very early, they tend to drop -s in 3s. This pattern of errors has received different types of explanations, ranging from syntax-based causes (Belth et al., 2021; Wexler, 1998) to constructivist approaches (Pine et al., 2023). However, not many studies have managed to compare these positions using experimental designs. This distinction is important because children with developmental language disorder (DLD) typically find these types of morphological markers difficult (Bishop, Snowling, & Thompson et al., 2016). However, there is little research using language repetition tasks online with matched samples of DLD and TD children. The present study uses sentences matched for singular and plural agreement with three different lengths. 1) shorter subject and predicate (The girl jumps a wall); 2) long subjects (The boys with a ball jump a wall); 3) long predicates (The boys jump a wall with a rope). We also used verbs with different levels of frequency in colloquial English. Then, an online version of the sentence repetition test was created to study the potential deletion. The tool is particularly valid for testing 4-6-year-old children. It also shows that the training phase of the experiment is critical to achieving successful results. Omission errors (dropping -s in verbs) are not rare, particularly with longer subjects, followed by longer predicates, and finally shorter sentences. Also, the frequency of verbs plays an important role in the ability to process the items successfully. These results open the door for testing the proportion of errors committed by typically developing children and DLD-diagnosed ones matched for MLU, ideally across different language that typically add morphological complexity with plural agreement (e.g., adding -n in Spanish).

07/17/2024 from 10:30 AM to 12:30 PM , room P217

Sentence imitation and its relation to working memory and language skills in Czech children with DLD

Klára Matiasovitsová; Filip Smolík

Sentence imitation (SI) is a sensitive marker of developmental language disorder (DLD). However, the contributions of language skills, short-term phonological memory and working memory (especially central executive) to the performance are not completely understood. Our study examines the effects of these variables on the imitation of sentences with different complexity (demands on central executive functioning can increase in morphosyntactically complex sentences) in children with DLD and typically developing (TD) children. Sixty-three children with DLD (6;5-9;6) were matched on gender and vocabulary with TD children (3;7-6;7). In addition to SI (containing relative clauses (RCs) and simple sentences) and receptive vocabulary, they completed tasks measuring their phonological memory and central executive (nonword repetition, listening span).
The effects of sentence type, DLD status and vocabulary / memory measures on the number of errors in sentence imitation were examined using cumulative link mixed model. Significant interaction between the effects of vocabulary and group (z = -2.00, p = .045) and vocabulary and construction (z = -1.97, p = .049) suggested that the relations between scores in SI and vocabulary are stronger in TD children and RCs. Models with nonword repetition / listening span as one of independent variables showed, that children with better

nonword repetition and listening span made fewer errors in SI (z = -2.23, p = .026 and z = -3.07, p = .002, respectively), and revealed the significant effects of group (z = -4.15 and z = -6.45, respectively, both p < .001) and construction (z = 3.80 and z = 3.83, respectively, both p < .001).

The results indicate that sentence imitation is a good indicator of DLD, as vocabulary matched TD children were better in SI, and valid marker of language skills, as there was a relation between SI and vocabulary. SI also reflects the functioning of memory.

07/17/2024 from 10:30 AM to 12:30 PM , room P300

Word frequency in Hebrew-speaking children with ID: implications for AAC core vocabulary.

Sigal Uziel; Gat Savaldi-Harussi

Children who do not attain functional vocal speech use Augmentative and alternative communication (AAC) systems to meet their daily communication needs and to support their language growth. Selecting words for these AAC systems presents a complex and challenging task. Despite the limited number of words on a specific layout of the communication board, it must effectively reflect language structure and enable efficient communication (Beukelman & Light, 2020). A prevalent approach for selecting vocabulary for AAC systems relies on core vocabulary (200-400 words constituting about 80% of a person's lexicon, irrespective of age or context). This paper presents findings from a pilot study proposing a wordlist for selecting core vocabulary for AAC systems used by Hebrew-speaking children with intellectual disabilities (ID). Our methodology involved analyzing natural language samples from five Hebrew-speaking children with ID using Levy's clinical corpus on CHILDES. These children, aged 3.5 to 8.4 (Mean MLU = 5.28), were audio recorded in naturalistic interactions with an interviewer and family member. Using CHILDES tools, wordlists were extracted for each child, along with their usage frequencies. Percentages of the 20, 50, 100, and 200 most frequent words were calculated for individual children and for a composite list from all five children out of the total words (tokens) on each list. Words were categorized as function/content and coded for lexical category, followed by an analysis of their lexical distribution. Results reveal that the top 200 most frequent words constitute 69%-80% of each child's lexicon and approximately 76% of the composite lexicon. Function words dominate the lexicon, while content words demonstrate lower frequency. These findings corroborate findings reported for Hebrew speaking children with typical development (Savaldi-Harussi & Uziel, 2023). The proposed wordlist will inform the creation of AAC intervention programs and promote early language development for Hebrew-speaking children with ID.

07/17/2024 from 10:30 AM to 12:30 PM , room P300

The shape bias in Mandarin-exposed preschool autistic children: the role of shape recognition

Yi Su; Yi (Esther) Su; Letitia Naigles

"Background: The shape bias is an important word learning strategy in children's language development in which the referent of a noun is extended to objects of similar shapes, rather than colors, textures, or sizes. Although numerous studies have observed atypical shape bias in children with autism spectrum disorder (ASD), there is no converging evidence regarding its underlying bases. Moreover, the research investigating the shape bias in children with ASD has been exclusively conducted in learners of Indo-European languages, yet it is less known whether the shape bias is a universal word learning mechanism across cultures and languages.

Methods: 37 two-year-old Mandarin-exposed typically developing (TD) children and a diverse group of 41 two-to-six-year-old children with ASD participated in a shape bias task and a shape recognition task. The intermodal preferential looking paradigm (IPL) was employed to examine children's shape bias performance. Children saw six triads of novel objects (target, shape-match, color-match) in both NoName and Name trials; a shape bias was indicated if they looked longer to the shape match during the Name than NoName trials. The shape recognition task consisted of nine three-dimensional objects composed of two to four geometric volumes, which represent nine basic level categories of objects.

Results: Mandarin-exposed TD children exhibited a shape bias while children with ASD did not show a shape bias despite a sizeable vocabulary (546 words). Further, a positive correlation was found between the shape recognition accuracy and the shape bias performance in the ASD group.

Conclusions: The shape bias performance of these children with ASD was positively associated with their ability to recognize object shapes. These findings provide cross-linguistic evidence for the shape bias and shed new light on the critical role of abstract representations of object shape in facilitating shape bias knowledge in

preschool children with ASD."

07/17/2024 from 10:30 AM to 12:30 PM , room P300

Professionals' scaffolding in interaction with minimally verbal children with ASD

Roxane Perrin Hennebelle

"Previous studies have shown that minimally verbal children with autism spectrum disorder (ASD) are atypical interactional partners. They respond better to interactions with partners who support them, while adapting the stimuli to their tolerance threshold (Plumet, 2014). They need their interlocutors to be trained into their specific characteristics, which can be done with feedback on their practices. These practices correspond particularly to scaffolding moves (Bruner, 1983), which can relate to the achievement of the activity (task scaffolding) or to linguistic productions (linguistic scaffolding). However, few studies have described these language practices and their effectiveness.

In order to study the scaffolding practices and their adaptation to the children's profiles, seven professionals and four preschool children with ASD in a French inclusive classroom were video-recorded during two years. We analysed 24 interactional sequences (5h30) during two activities, snacks (SK) and individual work-sessions (IWS). We coded task-scaffolding moves (guiding, regulation, and reactions to the children's productions) and linguistic-scaffolding ones (elicitation, labelling, and recast). We assessed how children's involvement (active vs passive) and reactions (adequate vs inadequate) influenced and were influenced by both types of scaffolding moves.

Results show that the professionals offered more frequent and diversified scaffolding during SK than during IWS. Concerning task scaffolding, the professionals relied more on physical guidance during IWS, while during SK they mostly broke down the task into simple components. Concerning linguistic scaffolding, they preferred labelling during IWS, while they favoured elicitations and recasts during SK. We observed significant inter-, and intra-individual variations depending on the children. These variations were more pronounced during IWS than during SK, which can be explained by the dialogical dynamics of these activities.

Discussion will address possible implementations of the study's follow-up. Indeed, by analysing the professionals' practices and offering them feedback, we can create conditions for reflexion on their own practices."

07/17/2024 from 10:30 AM to 12:30 PM , room P300

Morphosyntactic skills in Arabic-speaking children with ASD: Error Patterns in the Sentence Repetiti

Muna Abd El- Razoq; Natalia Meir; Elinor Saiegh-Haddad

"Autism spectrum disorder (ASD) is characterized by impairments in social interactions, communication, and repetitive behaviors (DSM–V, APA 2013). Although morphosyntactic deficit is not a core ASD trait, some children with ASD manifest significant impairment in this area (Kjelgaard & Tager-Flusberg ,2001; Schaeffer et al., 2023). Sentence repetition (SRep) tasks are reliable tools for detecting morphosyntactic deficits across various languages and populations, including children with ASD (Conti-Ramsden et al., 2001; Meir & Novogrodsky, 2020). This study is one the first to evaluate morphosyntactic abilities of Palestinian-Arabic (PA) speaking children using a PA SRep task.

A total of 142 PA-speaking children, aged 5-11, participated in the study: 75 children with typical language development (TLD) and 67 children with ASD. The SRep task targeted morphosyntactic structures of varying complexity, including simple SVO sentences, biclausal sentences, wh-questions, and relative-clauses. Children's accuracy scores were assessed across these structures, and error patterns encompassing morphosyntactic and pragmatic aspects were also analyzed.

Within the ASD group, two subgroups emerged: 43% showed intact language skills (ASD+NL) pairing up with TLD peers, while 57% showed morphosyntactic deficits (ASD+LI). Overall, all children made more morphosyntactic errors than pragmatic ones. Children with ASD+LI showed difficulties with producing complex morphosyntactic structures, such as relative-clauses and wh-object questions. Error analysis revealed that children with ASD+LI produced sentence fragments and simplified constructions when complex structures were targeted.

This study extends the cross-linguistic evidence of morphosyntactic heterogeneity in children with ASD to Arabic-speaking children. Moreover, it highlights the utility of SRep tasks in identifying additional morphosyntactic deficits in children with ASD. Error patterns suggest that poor morphosyntax, rather than pragmatics, challenges children`s performance on the SRep task. In conclusion, the results emphasize the need for tailored intervention plans targeting specific morphosyntactic deficits in some children with ASD."

07/17/2024 from 10:30 AM to 12:30 PM , room P300

Theory of Mind in ASD and DLD

Osnat Segal; Eden Hadad; Eden Hadad

"Purpose: This study examined how subgroups of children with ASD and children with DLD perform on ToM tasks and language comprehension of mental terms. Methods: Eighty Hebrew-speaking children aged 5-to-6 were assessed. The participants were divided into four groups: DLD, ASD-Language Impairment (ASD-LI), ASD-Language Normal (ASD-LN), and typically developing peers (TD). The language status was verified using a Hebrew language test (Goralnik). All participants had a nonverbal IQ within average range (>75 IQ). ToM skills were evaluated using the Hebrew ToM Task Battery (ToMTB). Comprehension of the factive verb know and the non-factive verbs think, guess, and the adjective sure was assessed using 12 pairs of stimuli organized into three sets of four, with each set containing one of each possible pairwise contrast between the terms (e.g., know/guess, know/think, guess/think, and sure/guess).

Results:TD children scored the highest on the ToMTB, followed by ASD-LN, ASD-LI, and DLD groups, in descending order. One-way ANOVA for ToMTB scores revealed significant group differences. Pairwise comparisons indicated TD and ASD-LN outperformed ASD-LI and DLD, with no significant difference between ASD-LN and TD or between ASD-LI and DLD groups. For factive and non-factive terms (FNFT), TD children achieved the highest scores, followed by ASD-LN, DLD, and ASD-LI groups. One-way ANOVA revealed significant group differences. Pairwise comparisons showed that TD and ASD-LN outperformed ASD-LI, but the difference with the DLD group did not attain significance. No significant difference was observed between ASD-LN and TD groups. A significant correlation was found between the FNF and ToMTB scores (r = .50, p <.001), suggesting an association between the two tasks.

Conclusion: The present study highlights differences in ToM and comprehension of FNFT across subgroups of children with ASD and demonstrates similarities between children with ASD-LI and DLD. The present findings emphasize the linkage between language development and ToM abilities."

07/17/2024 from 10:30 AM to 12:30 PM , room P301

Unraveling indicators of DLD in children with low exposure to their L2: A Longitudinal Approach

Jannika Boese; Anna-Lena Scherger

"Multilingualism is an increasingly relevant phenomenon in today's society, with children often exposed to multiple languages from an early age. One of the pressing challenges in the field of child language studies is the assessment of language acquisition and developmental language disorders (DLD) among multilingual children (Lüke et al., 2020), as they often face unique linguistic environments (e.g., Unsworth et al., 2014).

The investigation presented in this paper is part of a greater research project on language support of multilingual preschool children with low exposure to German as their second language (L2), visiting specialized preschool programs in western Germany. Our study involves a longitudinal examination of initially 54 multilingual children (age: M=4;8, SD=0.41, gender: 57% female) at the transition from preschool to school. To capture the L2-skills longitudinally, we conducted assessments at three time points around transition to school within 10 months. L2 grammar, vocabulary, and phonological complexity skills of the children were assessed at all three measurement occasions.

Our initial findings show significant improvements in L2 receptive language over time, with improvements in receptive grammar remaining until the follow-up assessments, which took place after the children had transitioned to school (see Author et al., 2023). To identify early markers for DLD, L2-skills of children with the lowest results in previous assessments (25%) will be assessed again in October 2023 (fourth measurement occasion). Since the children now have regular contact with their L2 for more than 18 months, diagnostics are carried out to identify DLD using standardized test procedures for multilingual children.

These forthcoming results will provide a more comprehensive picture of language development trajectories and offer valuable guidance for the assessment of early L2-skills. Our study addresses a critical gap in the understanding of L2-assessment and the delamination of early DLD-markers and typical language development among multilingual children."

07/17/2024 from 10:30 AM to 12:30 PM , room P301

L2 sentence comprehension and exposure effects in sequentially bilingual children with TD and DLD

Sini Smolander; Marja Laasonen; Pekka Lahti-Nuuttila; Eva Arkkila; Elin Thordardottir

"Background:

Differentiating typical language development and developmental language disorder (DLD) in bilingual children is challenging. Since societal language is often the language shared between the child and the SLT, there is a need for a better understanding of the applicability of the available L2 language tests. Particularly, scarcely studied sentence comprehension and the effects of L2 exposure on performance in this domain could offer valuable information in differentiating DLD in bilingual children.

Aim: We investigated sentence comprehension and L2 exposure effects in sequentially bilingual typically developing children and bilingual children with DLD. We carried out group-level comparisons and examined the classification accuracy of two L2 sentence comprehension tests while considering several explanatory factors.

Methods: In total 100 6-year-old children were recruited from daycare centres and a hospital clinic. Two offline tests were used to investigate sentence-level comprehension in Finnish. We used multiple regression analysis to compare TD and DLD performance on a group level and took the effects of relative lifetime exposure to L2 into account. Covariate-specific receiver operating characteristic (ROC) analysis was used to estimate the classification accuracy of the tests.

Results: Typically developing bilingual children performed significantly better compared to their peers with DLD in the sentence comprehension tests. The L2 exposure affected both groups similarly. The effect was significant but small. The sensitivity and specificity of the tests were good at their best, but the classification accuracy depended greatly on exposure.

Conclusions: Sentence comprehension performance in L2 is promising in assisting the differentiation of TD and DLD in children with several first-language backgrounds. It is important to add classification accuracy analysis to group comparisons when interpreting the utility of an assessment tool. In addition, explanatory factors, such as language exposure need to be considered."

07/17/2024 from 10:30 AM to 12:30 PM , room P301

Investigating the Impact of Acquiring English on Executive Function Development in Early Childhood:

AYA KUTSUKI; Hideyuki Taura

"According to a substantial body of research, bilingual children exhibit distinct executive function (EF) skills compared to their monolingual peers. However, most of this research has focused on 'native bilinguals' or children who are consistently exposed to two languages, leaving a gap in our understanding of how acquiring a foreign language impacts early childhood cognitive development.

This study examined how differences in English proficiency and the duration of English learning experiences influence EF development, with a specific emphasis on performance in the Simon task. The study centered on preschoolers in the process of acquiring English. Linear mixed models were employed to analyze data from eighty Japanese-English bilingual kindergarten children (M age = 55.07 months, SD = 9.86, range = 36.13-70.63), all hailing from Japanese-speaking families and learning English at the same Japanese-English kindergarten in Singapore.

First, in general, growth in Japanese vocabulary had a negative impact on their English vocabulary but not vice versa, indicating that their Japanese proficiency remains stable as their mother tongue.

Furthermore, the impact of their bilingual kindergarten experience on Japanese language development varied depending on their level of English proficiency. Children with lower English vocabulary acquired more

Japanese vocabulary through their kindergarten experience, while those with higher English vocabulary saw a reduction in their Japanese vocabulary through such exposure.

The results also revealed that English proficiency, regardless of age, played a crucial role in overall Simon task performance. The effects of the interaction between age and English proficiency differed between incongruent and congruent trials; inhibitory control was more closely linked to the combined effects of age and English proficiency than the ability to respond correctly.

Taken together, these findings suggest a connection between English proficiency and inhibitory control in English-learning preschoolers. We intend to conduct a more comprehensive analysis and discussion of the data."

07/17/2024 from 10:30 AM to 12:30 PM , room P301

The potential of a gesture comprehension task to screen for DLD in bilingual children

Lotte Van den Eynde; Inge Zink; Maaike Vandermosten; Ellen Rombouts

"Correctly identifying developmental language disorder (DLD) in bilingual children is still a substantial challenge. Given the many misdiagnoses, there is an acute need for a screening test that is less influenced by the large variation in language experiences and that allows for early detection. In this regard, a gesture task shows great promise. Gesture development is strongly related to language development with studies indicating that gesture comprehension may predict language development. Notably, an iconic gesture comprehension task can differentiate between young, monolingual children with and without DLD. A gesture comprehension task is highly promising to detect DLD in bilingual children, as the task does not require verbal output and has potential to be used regardless of a child's home or second language. In our study, we explore whether a gesture task can differentiate between bilingual children with and without DLD, and we examine its relationship with language proficiency measured by standardized language tests.

Analogous to Lüke and colleagues (2020), we developed an iconic gesture comprehension task consisting of 31 gestures. Children watch a gesture and select the corresponding image from a set of four images: a semantic-related distractor, a gesture-related distractor, an unrelated distractor, and the target item. The task will be completed by 72 bilingual children (typical development (TD)=36, DLD=36) between 3 and 9 years old. Standardized language tests are administered for validation purposes.

Preliminary findings from 53 participants (TD=22, DLD=31) reveal a significant group difference, with bilingual TD children outperforming bilingual children with DLD on the gesture task. Additionally, performance on the gesture task displays significant correlations with language tests assessing lexicon, morphosyntax, and home language development. Remarkably, the overall diagnostic accuracy of the gesture task reaches 85%. These results suggest that the gesture comprehension task holds promise as a screening instrument for DLD in bilingual children."

07/17/2024 from 10:30 AM to 12:30 PM , room P429

The Impact of Language Context on Bilingual Children's Memory for Newly Encountered Words

Yi Tong; Margarita Kaushanskaya; Haley Vlach

The context that forms the setting of a particular stimulus or event has been shown to affect memory retrieval. Tulving and Tomson (1973) proposed the encoding specificity principle, which posits that matching contexts between encoding and retrieval facilitates later recall of episodic memories. This principle was later extended to the linguistic context in the study of bilingual memory. To date, most studies on language-dependent memory have been conducted with adults and adolescents who already have years of experiences with language, and memory was assessed primarily using an immediate test. An important question remains whether young children who have limited prior knowledge and experiences with language demonstrate the same language dependency upon recall and whether such patterns can be observed after a delay. The current study addresses this research gap by investigating the effect of changing language contexts on bilingual children's word learning from storybooks using both immediate and delayed tests. 54 Mandarin-English bilingual children (Mage = 66.7 months, SDage = 9.6 months, 32 males) were presented with a novel word learning task. Children read a storybook containing 6 novel words either in Mandarin or English. Their memory of these words was assessed either in the same or different language both immediately after reading and following a 10-minute delay. The results revealed that children who encountered a mismatch in language contexts between initial encoding and subsequent retrieval exhibited poorer memory performance after delay compared to those who learned and were tested in the same language. Our findings suggest that matching linguistic context might serve as an additional

contextual cue that helps children retain information for longer periods of time, resulting in less forgetting. This study highlights the importance of considering the impact of instructional language on academic performance for learners of diverse linguistic backgrounds.

07/17/2024 from 10:30 AM to 12:30 PM , room P429

On the developmental relationship between code-mixing and MLU in bilingual children

Jane Man-Yu Lai; Ziyin Mai; Stephen Matthews; Virginia Yip

"Is code-mixing beneficial, detrimental or neutral to language development in bilingual children? While language mixing is discouraged in some educational settings, translanguaging theory views it as pooling of resources from multiple languages and modalities in order to facilitate learning and communication (Li, 2018). Children's code-mixing may be an index of grammatical competence (Yow et al., 2015), while mean length of utterance (MLU) has been found to be higher in mixed utterances than in monolingual utterances (Quick et al., 2018).

We examined data from 9 Cantonese-English bilingual children in the Hong Kong Bilingual Child Language Corpus, aged between 1;03 – 4;06 (Yip and Matthews, 2007). MLU was calculated for mixed and monolingual multi-word utterances in both Cantonese and English contexts. Analyzed using linear mixed effects models, MLU across all children was significantly predicted by utterance type (Monolingual/ Mixed; p<.001) and age (p<.001). There was also a significant two-way interaction between utterance type and age (p<.001).

Overall findings indicated that MLU was significantly higher in mixed than monolingual utterances in both Cantonese and English context. In terms of individual variation, 8 out of 9 bilingual children produced mixed utterances of significantly higher MLU than monolingual utterances in the Cantonese elicitation context; and 6 out of 9 children showed significantly higher MLU in mixed utterances in the English context, with this difference approaching significance or being numerically higher in the other 2 children. Developmentally, the older the child, the greater the MLU advantage in mixed over monolingual utterances.

From a developmental perspective, the increasingly higher MLU in mixed utterances as the children develop suggests that as children become more competent with both languages, they can creatively combine linguistic resources together to express complex content, consistent with Yow et al. (2015) and the translanguaging perspective."

07/17/2024 from 10:30 AM to 12:30 PM , room P429

To learn words or aprender words: Consequences of codeswitching for children's novel word learning

Emma Libersky; Caitlyn Slawny; Margarita Kaushanskaya

Bilingual children learn words in both single-language and codeswitched contexts. Prior work revealed both costs and benefits of codeswitched context on noun learning. However, verbs may be more difficult to learn than nouns, especially in codeswitched contexts and for children with weaker language skills. In two experiments, we examined effects of codeswitching on Spanish-English bilingual children's verb and noun learning. In Experiment 1, 25 Spanish-English bilingual children ages 4-5years (13 girls) learned two sets of English-like novel verbs: one in an English-only and one in a codeswitched condition. Children watched videos and heard sentences using the target verb. Sentences in the codeswitched condition naturalistically alternated between languages. Children learned words in six teach-test cycles measuring initial mapping (cycle one) and catch up (cycles two-six). We regressed item-level accuracy on condition, language ability, and their interaction. A marginal effect of condition and a significant condition-by-language ability interaction for cycle one indicated better immediate learning in the codeswitched condition, but only for children with higher levels of language ability. Cycle two-six analyses indicated a significant, positive effect of language ability only. In Experiment 2 (ongoing) 16 bilingual children ages 4-5years (7 girls) are learning English-like nouns referring to imaginary foods, tools, and animals in English-only and codeswitched conditions; otherwise, the methods are identical to Experiment 1. Preliminary analyses indicate above-chance learning in both conditions, and no significant effects of condition or language ability. Codeswitched context did not disadvantage learning in either experiment. In fact, contrary to our predictions, an initial advantage of codeswitched input for verb learning was observed, especially in children with higher language abilities. This contrasts with prior studies indicating a disadvantage of codeswitched (vs. single-language) context for word learning, perhaps reflecting more naturalistic and more extensive exposure to codeswitching in our study vs. prior studies.

07/17/2024 from 10:30 AM to 12:30 PM , room P429

Input Effects on Syntactic Development: The Case of Particle Placement

Arthur KAN; Ziyin Mai; Stephen Matthews; Virginia Yip

"This paper presents the results of a study of qualitative aspects of input and lexical specificity effects on particle placement patterns in a dataset comprising longitudinal speech data from monolingual English-speaking children (1;10-2;08), Cantonese-English bilingual children (1;03-4:06), and child-directed speech from their respective input providers. To what extent and how the adult's usage of a syntactic pattern can influence the child's production has been well-studied in monolingual settings, but not in bilingual environments. The English verb-particle construction (VPC) has two possible word orders: VPO (put down the book) and VOP (put the book down), whereas the closest equivalent in Cantonese, the directional verb construction (DVC), only allows the VPO order. Corpus-linguistic research has identified distinctive collexemes that are either strongly associated with VPO (pick up the phone) and VOP (get the book back). We hypothesize native adults' usage of VPC ordering is contingent upon such groupings of collexemes. The bilingual experience dilutes the absolute frequency of encountering different distinctive collexemes, therefore, we predict the major area of cross-linguistic influence to be in VPCs that are (i) infrequent and (ii) lexically-specific in its occurrence with a particular order.

We extracted 3654 valid English VPCs from the bilingual and monolingual corpora. In order to identify lexical effects, we only included the shared VPC lemma (23 types) resulting in 2053 VPCs for the analysis. We first ran a regression and found that the bilingual group used significantly more VPO orders than their monolingual peers and adults in both bilingual and monolingual groups, indicating quantitative crosslinguistic influence. Next, we ran a distinctive collexeme analysis and found that bilinguals experience stronger crosslinguistic influence when the VPC lemma has a strong preference for VPO order in English (e.g. pick up the phone)."

07/17/2024 from 10:30 AM to 12:30 PM , room P429

Code-mixing as translanguaging: MLU in two trilingual Cantonese-Mandarin-English speaking children

Jane Man-Yu Lai; Ziyin Mai; Stephen Matthews; Virginia Yip

"Recent studies have advocated translanguaging as a pedagogical practice which encourages learners to use their entire linguistic repertoire to express meaning, with code-mixing viewed as facilitating learning (Li, 2018). While previous studies on bilingual children have found suggestive evidence for linguistic competence (Yow et al., 2015), higher MLU and complexity associated with mixed utterances (Quick et al., 2018), little is known about code-mixing in trilingual development.

We analyzed longitudinal data of two trilingual Cantonese-Mandarin-English speaking children in CHILDES, Winston(1;07-3;07) from the Child Heritage Chinese Corpus and Leo(1;06-2;11) from the Leo Corpus. MLU was computed for mixed and monolingual multi-word utterances in Cantonese, Mandarin and English contexts. A linear regression model was fitted for each child and language context subset, with MLU as the dependent measure and utterance type (Monolingual/ Mixed) and age as predictors.

The two trilingual children showed similar patterns. MLU was significantly higher in mixed than monolingual utterances in Winston's Cantonese (p<.001) and Mandarin (p<.001); and numerically higher in Leo's Cantonese and Mandarin. In the Cantonese context, the MLU of mixed utterances peaked at 6.1 (Winston) and 6.3 (Leo) versus 5.7 (Winston) and 4.9 (Leo) for monolingual utterances. Similarly in the Mandarin context, the MLU of mixed utterances peaked at 6.2 (Winston) and 6 (Leo) versus 5.6 (Winston) and 4.4 (Leo) for monolingual utterances. However, both children seldom produced mixed utterances in the English context, and MLU was comparable between both utterance types.

Qualitatively, mixed utterances were attested containing elements from three languages. Taken together, these novel findings suggest that trilingual children are pooling their linguistic resources together strategically and combine elements of three languages to express more complex content than they can express in one language alone, and are thus productively 'translanguaging', at least in Cantonese and Mandarin. These contribute to a positive view of code-mixing."

07/17/2024 from 10:30 AM to 12:30 PM , room P429

Reading in two languages improves bilinguals' ability to integrate information from different texts

Jacopo Torregrossa

Studies on bilinguals' processing of written texts typically compare bilinguals with monolinguals and involve only one language. However, bilinguals' discourse-models result from dynamic interactions between all languages of their repertoires (DeHouwer 2022, Rothman et al. 2022, Torregrossa et al. 2022). Our study only investigated bilinguals, but in one-language vs. two-language MODE, allowing for within-participant comparisons: We studied effects of two-language MODE on bilinguals' abilities to comprehend texts, draw intertextual inferences, and create discourse representations. This was inspired by didactic activities, where children integrate information from texts in different languages (Celic/Seltzer 2011, Ascenzi-Moreno/Espinosa 2018). Thirty-nine Italian-German 4th-graders of a bilingual school in Germany played a board-game: the monkey Cheeky solved problems in 8 map-locations using superpowers. At each location, children found information about 3 superfruits/superpowers (Text_A) and a story describing Cheeky's problem (Text_B). Both texts contained indefinite objects (Text_A: eating Meraca lets someone bend metal pieces very easily; Text_B: The monkey is now stuck in a fence). Texts appeared in one-language (Italian or German) or in two-language MODE (Italian-German/German-Italian). Children answered four questions:
(Q1-Q2) COMPREHENSION: Where was Cheeky at the beginning of the story?/Why does Cheeky have a problem?
(Q3) INFERENCE based on Text_A AND Text_B: Which fruit should Cheeky eat?
(Q4) TEXT INTEGRATION: What can Cheeky do after eating the fruit?
For (Q4), children received points for referring to both texts(e.g., Cheeky can bend metal [Text_A] and get out [Text_B]), or using definite/specific referring expressions (e.g., Cheeky can get out of THE fence)
A logistic mixed regression model showed no significant MODE-effect on COMPREHENSION and INFERENCE, but a significant MODE-effect on TEXT INTEGRATION. In two-language mode, children produced more elaborate and information-rich responses integrating both texts, suggesting that reading in two-language mode allows them to build more coherent discourse representations. The results support the use of bilingual reading-activities in schools.

Individual oral presentations: Thursday Morning

07/18/2024 from 11:30 AM to 01:30 PM , room P217

VOT production by bilingual and functional monolingual children in a bilingual community

Robert Mayr; Simona Montanari; Jeremy Steffman; Ilda Umana; Lauren Sanchez

Previous research has examined voice onset time (VOT) production in monolingual and bilingual children (Fabiano-Smith & Bunta, 2012; Muru & Lee, 2017). However, these studies did not include "functional monolinguals" who live in the same community as bilinguals and have regular exposure to the other language despite not actively using it. Moreover, little is known about cross-linguistic differentiation in bilingual preschoolers' speech productions. To address these gaps, the present study assessed English VOT patterns in word-initial bilabial and coronal stops produced by Spanish-English bilingual preschoolers (n=29; mean age=50.0 months, SD=9.9) and age-matched functional English monolinguals (n=28; mean age=49.4 months, SD=7.8). To examine cross-linguistic differentiation, we also assessed the bilingual children's VOT productions in word-initial /b-p/ and /d-t/ in Spanish. Data collection involved elicitation of single-word speech samples in each language based on pictorial representations of familiar words. This yielded 627 English tokens and 327 Spanish tokens. The digitized materials were analysed acoustically using PRAAT software (Version 6.1.09, Boersma & Weenink, 2020). The results show that the bilinguals and functional monolinguals differentiated English voiced and voiceless stops in the same way despite the latter using English significantly more often and having a more extensive lexicon, as assessed using the PPVT-5 (Dunn, 2018). At the same time, the bilinguals exhibited cross-linguistic interaction patterns, with differentiation of /p/ and /t/ across Spanish and English, but merged categories for /b/ and /d/. Finally, the results indicate that the functional monolinguals' English VOT productions were also influenced by exposure to Spanish since they exhibited unusually high prevoicing patterns for /b/ and /d/, although these categories are typically produced with short-lag VOT patterns in English. This suggests that in a bilingual community mere exposure to a minority language may affect speech patterns in the majority language, even if the minority language is not actively used.

07/18/2024 from 11:30 AM to 01:30 PM , room P217

Developmental Relation of Gesture and Language in One-Year-Olds

Kawai Chui; Huei-Mei Liu; Feng-Ming Tsao

Gesture emerges earlier than language and indexes children's communicative, symbolic, and language development. Cross-modal association has been studied in diverse interactional and experimental contexts; however, the relation of gesture and receptive-expressive language in infancy remains obscure. The present study investigates whether gestural abilities are correlated with language abilities, and if so, in what manner. We observed gestural and linguistic performances in 23 one-year-olds who interacted with their mothers while engaging in the same sets of toys and pictures for about 40 minutes in the lab. Infants' language data were derived from the standardized Chinese (Taiwan) version of CDI. We analyzed 823 communicative gestures spontaneously produced by infants – declarative gestures, imperative gestures, iconic gestures, showing, and giving. Language measures were vocabulary production, vocabulary comprehension, and comprehension of daily expressions. Using Pearson Correlation analysis, we found overall correlations between infants' gestures and language performances (rs=.606 - .666, ps<.01). For gesture type, the rarity of iconic gestures (1.7% of the total) did not yield correlations with language, and giving someone an object (19.4%) was only relevant to vocabulary production (r=.515, p<.05). In contrast, deictic gestures of pointing (65.1%) and showing (13.8%) consistently maintain significant associations with language performances (rs=.430 -.776, ps<.05). Declarative index-finger pointing is much more prevalent than palm pointing (193 vs 50) in communicating a state of interest. It is correlated with vocabulary comprehension (r=.618, p<.01) more strongly than forefinger pointing for demand and request (r=.430, p<.05) or showing someone an object (r=.500, p<.05). The particular close relation between declarative gestures and language likely rests upon the primary referential-communicative function of making known infant's own concern toward a referent and sharing self-interest with others. These results constitute an important basis upon which to determine gestural influence on language development as children grow.

07/18/2024 from 11:30 AM to 01:30 PM , room P217

From speech biomechanics to phonology: children use intrinsic vowel pitch for contrast enhancement

Jérémy Genette; Steven Gillis; Jo Verhoeven

"This study investigates whether Intrinsic Vowel Pitch (IF0) is present in children's very early speech or if it is progressively acquired. IF0 refers to the (almost) universally observed phenomenon in adult speech that high vowels exhibit a higher F0 than low vowels. Two hypotheses have been formulated to explain IF0: a biomechanical account, which characterizes IF0 as an inevitable, physiologically driven process and an enhancement account, which attributes IF0 to speakers' effort to render the distinctiveness of high and low vowels more salient by manipulating their F0.

Both hypotheses make different predictions about the emergence of IF0 in children's speech. The biomechanical account posits that IF0 occurs in prelexical vocalizations, while the enhancement account suggests that IF0 arises during the lexical period. Current research on IF0 in early speech consists of two small-scale, inconclusive studies. The present study seeks to provide evidence of IF0 emergence in children's early speech.

For this purpose, an acoustic investigation was conducted on a longitudinal corpus spanning 6 to 24 months, with monthly recordings from 30 children. This corpus contains more than 100,000 vowels from prelexical vocalizations and early words. These vowels were categorized as high or low vowels based on their spectral properties.

The results show that the F0 of high vowels is higher than that of their low counterparts as early as 6 months. This supports the idea that IF0 may be a biomechanical byproduct of vowel articulation. However, the findings also demonstrate that the size of IF0 increases from the first words onwards, suggesting that children resort to IF0 to enhance the perceptual contrast between high and low vowels from an early stage.

In conclusion, IF0 is probably biomechanical in origin but children learn to use it as an additional cue to enhance the contrast between high and low vowels."

07/18/2024 from 11:30 AM to 01:30 PM , room P217

English Vowel and Stop Voicing Perception in Spanish-English Bilingual Preschoolers

Simona Montanari; Jeremy Steffman; Robert Mayr

Despite an abundance of research on speech perception in simultaneous bilingual infants, few studies have examined how young bilinguals perceive speech sounds in the preschool years, when important preliteracy skills whose emergence is dependent on speech perception abilities are being developed. This study examines English vowel (/i-ɪ/) and stop voicing (/b/-/p/) perception in Spanish/English bilingual preschoolers (N = 28, mean age = 4;7), comparing bilinguals' perception patterns to those of monolingual peers (N = 32), and examining how child-internal (age) and external variables (input quantity and input diversity) predict English perceptual performance. Perception was assessed through a forced-choice minimal-pair identification task in which children heard synthesized audio stimuli that varied systematically along an /i-ɪ/ and a /p-b/ Voice Onset Time (VOT) continuum and were asked to match them with one of two pictures for each contrast. Children were familiarized with the stimuli before the experiment. We analyzed the data with Bayesian mixed-effects logistic regression analyses of categorization data, modeling responses as a function of continuum step, language background (monolingual or bilingual), age, exposure to English and Spanish (i.e., input quantity), and number of input providers in each language (i.e., input diversity). The results show no bilingual-monolingual differences for vowel perception, whereas bilingual children's identification of the English consonant contrast was affected by their experience with Spanish stops, as evidenced by different patterns from matched English monolinguals. The results also show that while age solely predicted consonant perception, input quantity and diversity interacted together to predict how well children perceived the vowel contrast, with input diversity limiting perceptual performance in the context of less English exposure. We interpret these findings as suggesting that vowel perception may a) develop earlier, b) be less susceptible to cross-linguistic interaction, and c) be more affected by input characteristics than consonant perception.

07/18/2024 from 11:30 AM to 01:30 PM , room P217

The Prosody of Compound Nouns: Direct Comparison of Tunes Helps Children (and Adults)

Laura Wagner; Yu Jin Song; Shari Speer; Sarah White; Rebekah Stanhope; Rachael Frush Holt

"In English, lexical prosody can shift meanings. For example: Strong-Weak (SW) patterns lead to compound nouns, which may have idiosyncratic meanings (a GREENhouse is a place to grow plants) while Weak-Strong (WS) patterns lead to compositional modifier + noun interpretations (a greenHOUSE is a house colored green). Previous work has found that children generally favor the idiosyncratic compound noun interpretation for both stress patterns and struggle to use prosody to distinguish between the two until as old as 11 years.

In Study 1, we tested children (N = 61, 7 – 12 years) and adults (N = 23) by showing them two pictures (12 trials, e.g. a house that was green and a house for plants) and asking them which matched a target audio (SW or WS stress, counterbalanced across participants). Results largely replicated the previous literature: all children preferred to choose the compound noun picture, but only adults could use prosody at statistically significant levels to differentiate between the pictures.

In Study 2 we tested 75 parent-child dyads (age of children: 7 – 12 years) with the identical set of audios and pictures from the previous study, but now participants were presented on each trial with a single picture (e.g., a house that was green) and two auditory stimuli (SW and WS stress patterns) and asked which auditory stimulus described the picture. Children as young as 9 years could now successfully match the correct prosody to the target interpretation. We argue that the methodological change across experiments helped participants focus on prosody and encouraged direct comparison of the two stress patterns. These results suggest that prosodic contrasts are represented but can be used only in conditions where they are highlighted. Ongoing analyses are examining whether parental production of compounds (i.e., children's input) might predict children's prosodic comprehension."

07/18/2024 from 11:30 AM to 01:30 PM , room P429

SASTA: Semi-Automatic Analysis of Spontaneous Language in Dutch

Martin Kroon; Jan Odijk; Frank Wijnen; Jelte van Boheemen

"The grammatical analysis of spontaneous language transcripts is an important instrument in research into language development and language disorders. For Dutch, two methods are available: TARSP for young children (1–4 years), inspired by LARSP for English, and STAP for 4–8 year-old children. Analysis of spontaneous language transcripts is done fully manually so far. In this presentation we will introduce and describe an open source application – SASTA – that can carry out a large part of this analysis automatically for TARSP and STAP.

SASTA accepts various text formats as input (including CHAT), and uses Alpino, an 'off-the-shelf' sentence parser for Dutch. SASTA recognizes a large variety of forms of deviant language use and analyzes these correctly. A significant feature of SASTA is a routine (AuChAnn – Automatic CHAT Annotation) that generates valid CHAT codes for informal 'faithful' transcriptions of words and phrases that are accompanied by an explanation by the transcriber. It generates as output a method-specific form and an annotated transcript. The output transcript can be corrected by a linguist, if needed, and re-uploaded into SASTA, after which SASTA generates an adapted (improved) method-specific form.

In experiments on corpora of typical and disordered child language, SASTA achieves an accuracy between 88 and 95% for both TARSP and STAP.

Though, SASTA cannot replace human analysis completely as yet. Further development is ongoing, in close collaboration with researchers in language development and clinical linguists. Nonetheless, using SASTA in its current state already leads to higher efficiency and better quality of analyses. Its use can thus contribute significantly to improving and accelerating research into language development.

In this talk, we will discuss SASTA's under-the-hood architecture, its strengths and its current limitations. Additionally, we will zoom in on SASTA's performance by showcasing its interface and the analysis it produces in a brief live demonstration."

07/18/2024 from 11:30 AM to 01:30 PM , room P429

Prognostic Validity of Early Screening Instruments for Developmental Language Disorder in German

Eveline Pinstock; Satyam Schramm

"Developmental Language Disorder (DLD) is associated with poor educational outcomes (Bleses et al., 2016) as well as an increased risk for psychological problems (Beitchman et al., 2001). Thus it is important to identify affected children early in order to support them. Some children with language delays at the age of two develop a DLD later. The other part of these children overcome the language deficits independently, which makes early identification of DLD challenging (Sachse & Suchodoletz, 2008).This study is the first to examine the prognostic validity of the German language screenings FRAKIS-K (Szagun et al., 2023) and SBE-2-KT (Suchodoletz, 2011) at the age of two years in relation to a clinically relevant DLD at the age of four years.

As part of a longitudinal study, parents filled out the German parent questionnaires FRAKIS-K and SBE-2-KT to assess their children's early language abilities around their children's second birthday. On their fourth birthday, the children (N=145) underwent standardized diagnostics of their language abilities (subtests 'vocabulary', 'grammar', and 'sentence repetition' from P-ITPA; Esser & Wyschkon, 2010; and 'receptive language' from IDS-P; Grob et al., 2013). Children who were at least 1.5 standard deviations below the mean of the normative samples in one of the subtests were classified as clinically abnormal.

Prognostic validity is determined using sensitivity, specificity, positive and negative predictive value as well as RIOC (relative improvement over chance). Additionally, ROC curves are created in order to obtain an ideal cut-off value of the vocabulary lists of the FRAKIS-K and SBE-2-KT for the classification of abnormal and normal.

The results of the study will be presented and the practical implications for the use of language screenings as part of the German pediatric medical check-up at the age of two years will be discussed."

07/18/2024 from 11:30 AM to 01:30 PM , room P429

The use of pupillometry in bilingual assessment

Lisa Röbstek; Anna-Lena Scherger

"Bilingual children, like their monolingual peers, face a substantial risk of developmental language disorders (DLD). However, to date, there are no screening tools for bilinguals, hindering an early intervention and resulting in academic and social disadvantages (Thomas et al., 2019). Early assessment poses a great challenge as children are usually assessed according to their word production. However, bilingual children do not yet produce language in the second language when assessment is needed. Thus, there is a need for assessment tools focusing on implicit language knowledge rather than explicit language production.

As a non-invasive method, pupillometry can focus on implicit knowledge without requiring an explicit reaction. Especially the Violation of Expectation (VoE) paradigm has shown promising results. Studies employing VoE have examined children's reactions to grammatical and ungrammatical sentences (Süss et al., 2018; Scherger et al., 2023) and simple versus complex sentences (Lum et al., 2017). They have consistently demonstrated that children exhibit pupil dilation in response to complex or unexpected stimuli. Further, children with DLD react differently than typically-developed children.

The present ongoing study pioneers the use of pupillometry in early DLD detection in bilinguals. For this purpose, grammatical and ungrammatical stimuli sentences (manipulating subject-verb agreement and verb-second position) are auditorily presented to 2- to 6-year old bilingual children (N = 45, mean age: 4.51, SD: 1.25; ≤ 12 months exposure to German). The pupillometry results of these children are then compared with their performance in non-word repetition, a recognised clinical marker for DLD in bilinguals (Schwob et al., 2021). After 12 months, the participants' language production will be reassessed to retrospectively validate the pupillometric identification of children at risk for DLD. Preliminary findings reveal that n = 3 children do not display pupillometric sensitivity to grammatical violations, with one child additionally exhibiting poor performance in the non-word repetition task."

07/18/2024 from 11:30 AM to 01:30 PM , room P429

Assessment of Mandarin Receptive Vocabulary in preschool children learning Mandarin

Hecheng Zhang; Jiangling Zhou; Ziyin Mai; Virginia Yip

"This study assessed Mandarin vocabulary in preschool children, utilizing an enhanced version of the Mandarin Receptive Vocabulary Test (MRVT) created by Chan, Lee, and Yip (2014). MRVT is the first standardized tool for Hong Kong children learning Mandarin as an additional language. It measures comprehension of nouns, verbs, and attributes from the early vocabulary inventory of Mandarin (Hao et al., 2008) through a word-picture matching task, with phonological, semantic, and unrelated distractors. We examined the reliability and validity of a short form of the test with improved visual stimuli among Cantonese-speaking child learners of Mandarin and investigated lexical development across different ages and exposure levels: children learning Mandarin at school in Hong Kong (Group 1, n = 78, age 4-6), and children receiving substantial Mandarin input at home in Hong Kong or Guangzhou (Group 2, n = 16, age 3). Based on previous projects, 65 low-accuracy items were selected from the original full test to create the short form of MRVT in this analysis. Input distribution and parent-rated proficiency in Mandarin were collected through parental questionnaires for both groups. For Group 2, additional measures of Mandarin proficiency were administered to evaluate the test validity (i.e., CDI, Tardif et al., 2008, and the Mandarin vocabulary subtest in WPPSI-IV, Weschler, 2013).

Results of Group 1 suggest the enhanced MRVT had high internal consistency (Cronbach's alphas: 0.923) and correlated with parent-rated proficiency (r=.53, p<.001). Age and family input uniquely and positively contributed to MRVT scores (ps<.005). With increasing age and improved proficiency, children made more phonological errors (rs>.5, ps<.001) and fewer semantic errors (rs<-.2, ps<.05). For Group 2, MRVT scores highly correlated with CDI scores (r=.80, p<.001) and WPPSI-IV vocabulary scores (r=.55, p<.05). Overall, this enhanced short version of MRVT shows promise as a reliable and valid measure of Mandarin receptive vocabulary knowledge."

07/18/2024 from 11:30 AM to 01:30 PM , room P429

Does degree of partner's extraversion affect children's speech accommodation?

Yitian Hong; Si Chen; Bruce Xiao Wang

"During conversations, individuals adapt their speech in response to their partners, a phenomenon known as 'speech accommodation'. Communication Accommodation Theory (CAT) suggests that this adaptation is employed to manipulate social distance, and it's influenced by the impression we have of our conversation partner. While there's a growing body of research on adults, little is known about how children accommodate their speech in conversations. Does the impression of partners also affect children's speech accommodations? This study aims to expand understanding of child speech accommodation by investigating the effect of perceived personality of the partner, particularly their extraversion degree.

Previous studies showed a correlation between extraversion and specific speech patterns, e.g., individuals with higher extraversion tended to imitate F1 more with their speech being louder and faster. It remains unknown whether children perceive this correlation, leading to changes in their production.

Natural conversations were collected from 28 pairs of Mandarin-speaking children aged 10 to 12. The children participated in a game where they collaboratively identified differences between their pictures using spoken language. Each difference was related to a keyword. After the game, they evaluated their partner's extraversion using a five-point Likert scale. F1, F2 and f0 of the keywords were analyzed. The average values of other pairs were utilized as baselines. The study found a significant interaction between the difference from partner vs. difference from baseline and the partner's extraversion score for f0 ($\chi2 = 25.231$, Df = 2, p < 0.001***), with no effect on vowel formants. Post-hoc analysis showed significant decrease of f0 difference from partner along with the increase of score, indicating that children were more likely to converge their f0 when they thought their partner was more extravert. The contribution to the expansion of CAT for children and the exploration of individual differences will be discussed."

07/18/2024 from 11:30 AM to 01:30 PM , room P429

Validation of a new verb and sentence battery for children

Vânia de Aguiar; Kim Vos; Annet Kingma; Roel Jonkers; Aliene Reinders; Cheyenne Svaldi

Background. Children with language disorders (LD) show persistent language difficulties affecting verb processing disproportionately. Inflection of verbs for tense is stated to be an important diagnostic marker for the identification of LD. However, existing language assessment batteries for Dutch are not designed to identify specific impairments in lexico-semantic and syntactic processes underlying verb and sentence production and comprehension. The aim of this study is to assess the construct validity, concurrent validity and diagnostic accuracy of each subtest of a new verb battery designed to evaluate verb and sentence processing abilities in children aged 4 to 12. Method. 90 typically developing children (M = 7.25, SD = 2.11) and 34 children with LD (M = 8.74, SD = 2.15) were included in this study. Children were evaluated with 4 new tests: action naming, verb-picture matching, sentence completion, sentence-picture matching. These tests consider word properties at single word level (frequency and concreteness) and morphosyntactic processes at sentence level related to word order, finiteness, and coreference, both for comprehension and production. Standard language measures were also administered to measure concurrent validity for measuring lexico-semantic and syntactic skills.
Results and discussion. Children with LD score significantly lower on all tasks than TD children. In single word tasks, children with LD significantly performed worse on low compared to high concreteness items, denoting semantic difficulties. Children with LD made more mistakes than TD children in most sentence types examined. Validity analyses showed generally strong construct validity via correlations with age, variable concurrent validity, and acceptable to excellent reliability.

The first results are satisfactory in terms of validity and reliability.
Conclusion. The tasks may add to the current instruments to evaluate language impairments
in specific aspects of verb and sentence processing, enabling identification of the functional locus of
these language impairments and thus better intervention planning.

Individual oral presentations: Friday Morning

07/19/2024 from 08:30 AM to 10:30 AM , room P217

The Role of Early Language Experiences in The Transmission of Family Background Inequality.

Anna Brown; Sophie von Stumm

"Children from families with fewer socioeconomic resources face a higher risk of poor long-term developmental outcomes. A key pathway for transmitting this family background inequality could be children's early life language experiences. Socioeconomic status (SES) is known to influence language environments, a 'language gap' becomes evident early in life between high SES and low SES children.

Our research sought to quantify the role of early life language experiences in mediating the connection between family background and developmental outcomes, which had been previously unknown. This study builds upon previous research in two main ways. Firstly, our sample was well-powered and SES-representative. We used data from E-Risk, a UK-based longitudinal cohort study of 1,116 families who have been followed up at regular intervals since age 5. Secondly, we used mediation analysis to quantify how much the early language environment mediates the association between SES and developmental outcomes, both concurrently and across development.

We quantified children's early life language environments from naturalistic samples of their mother's speech. A wide range of language markers were extracted representing both lexical diversity and syntactic complexity. Preliminary analyses suggest that markers of mothers' language quality correlated with their SES indicators (education, occupation, and income) at small to medium effect sizes. Mothers' quality of language also significantly predicted children's language ability at ages 7 and 12, but these associations were more modest than expected based on previous studies. Our results highlight the importance of using well-powered and large-scale methods for accurate child development research. Further results will address which SES indicators are most predictive of the language environment and how predictive early language environments remain throughout education. Our study provides an evidence base for language interventions and defines the upper limit of effectiveness an intervention can have in reducing inequality."

07/19/2024 from 08:30 AM to 10:30 AM , room P217

Role of vision in learning language-specificity in co-speech gesture and its lack in silent gesture

Seyda Ozcaliskan; Che Lucero; Susan Goldin-Meadow

Language-specific gestures emerge in speakers even if they have not seen others gesture: Adult speakers who are blind from birth gesture when they talk, and these gestures resemble the gestures produced by sighted adults speaking the same language. Specifically, blind adult speakers of structurally different languages follow the patterns of their native language in their packaging and ordering of semantic elements in gesture, but only when the gestures are produced with speech (co-speech gesture) and not without it (silent gesture; Özçalışkan et al., 2016a, 2018). Here we ask whether the timely onset of language-specific patterns in co-speech gesture, and the lack of such patterns in silent gesture, is affected by the ability to see others gesture. We studied speech and gestures produced by 30 blind and 30 sighted children learning Turkish, equally divided into 3 age groups: 5-6, 7-8, 9-10 years. The children were asked to describe three-dimensional spatial event scenes (e.g., running out of a house) first with speech, and then without speech using only their hands. We focused on physical motion events, which, in blind adults, elicit cross-linguistic differences in speech and co-speech gesture, but cross-linguistic similarities in silent gesture. Our results showed an effect of language on gesture when it was accompanied by speech (co-speech gesture), but not when it was used without speech (silent gesture) across both blind and sighted learners. The co-speech gesture pattern was in place at the earliest ages we tested both the blind and sighted children. The silent gesture pattern appeared later for blind children than sighted children. Our findings highlight gesture as a robust and integral aspect of the language acquisition process at early ages and provide insight into when language does and does not have an effect on gesture, even in blind children who lack visual access to gesture.

07/19/2024 from 08:30 AM to 10:30 AM , room P217

Activities in toddler classrooms: A multilevel analysis of educator-child interactions.

Rochana Mroué; Caroline Masson; Christelle Maillart

Context: Children's language environments are crucial for the development of early oral language skills (Hoff, 2006), which in turn support later school readiness skills and enables academic achievement (National Early Literacy Panel, 2008). To date, there is limited evidence on the quality of interactions in toddler classrooms, and even fewer studies have investigated interactions across different activities (Guedes et al., 2020). However, different activities are likely to influence educators' language practices and children's opportunities for interaction (Degotardi et al., 2016; Cadima et al., 2022). Objectives: In this context, the current study explores the extent to which global interactions, fine-grained measures of children's and educators' talk, and specific talk strategies vary according to different activities. Method: Video recordings captured educator-child interactions on a single day in 40 French toddler classrooms, with an average age of 15-36 months. At the classroom level, trained observers coded global interactions during multiple observation cycles in different activities using the Classroom Assessment Scoring System - Toddler (CLASS-Toddler; La Paro et al., 2012). Additionally, 10 minutes of educator-child interactions in each activity were extracted and transcribed using the CLAN program (MacWhinney, 2000). At the individual level, fine-grained variables measurements (i.e., lexical diversity, mean length of utterance) were conducted using CLAN, and specific talk strategies (i.e., wh-questions, comments) were coded according to a specific coding scheme. Results: Our multilevel models and corpus analyses predict that some activities are more conducive to higher-quality interactions (i.e., book reading) than others (i.e., mealtime) at all levels of analysis. We also predict that different patterns of children's and educators' talk strategies are distinctly associated to fine-grained variables and global quality ratings. Practice or Policy: Professional development should include targeted training focused on improving the least effective interactions within certain activities and/or maximizing the effectiveness of interactions in others.

07/19/2024 from 08:30 AM to 10:30 AM , room P217

Complex language use in children with hearing loss

Sharon Klieve; Patricia Eadie; Lorraine Graham; Suze Leitão

"Language has long been recognised as a key area of challenge for children with hearing loss (CHL). By the very nature of their hearing loss, they encounter barriers and difficulties accessing spoken language thereby impacting the quantity and quality of their language experiences. While CHL are at risk for language difficulties across language domains, little research has focused their use of complex syntax. This research investigated complex syntax use in eighteen 8- to 10-year-old children diagnosed with a moderate to profound hearing loss who had been fitted with hearing aids or implants before 2 years of age. Each CHL was matched on age with a peer with typical hearing and language development.

Findings indicate that CHL and children with typical hearing (CTH) have similarities in their complex syntax use across both measures of general language and complex language. However, when fine-grained analyses are undertaken, there are differences and those differences are impactful. Results indicate that while CHL produce a similar range of complex syntax types, they exhibit less frequent use, less variety, and reduced accuracy across and within complex syntax types as compared to their typically hearing peers. CHL demonstrate a range of error types that suggest challenges across multiple language domains.

Another broad finding is that relying on standardised language assessments appears to overestimate the skills of CHL and mask ongoing vulnerabilities. CHL as a group may score in the average range but there are still significant differences and wide variability - item and error analysis is crucial for understanding of individual strengths and challenges. To build a complete description of the complex syntax of CHL, multiple exemplars and multiple opportunities in different contexts are needed. The novel assessment protocol has promise as a comprehensive battery that can provide a deeper analysis of complex syntax in individual CHL."

07/19/2024 from 08:30 AM to 10:30 AM , room P429

Contrasting lexical biases in Mandarin speech: verb-biased caregivers, but noun-biased preschoolers

Yi Su; Yi Su

"This observational study aimed to depict the lexical bias of Mandarin-speaking preschoolers with and without autism spectrum disorder (ASD) by analyzing children's speech and caregiver input during semi-structured parent-child interactions.

We collected naturalistic language samples from 37(16 girls) 3-6-year-old (Mage=57.9, SD=12.92) Mandarin-speaking children with ASD and their caregivers, and expressive language-matched 37(21 girls) 18-36-month-old (Mage=25.5, SD=9.39) typically developing (TD) children and their caregivers. Computer-assisted part-of-

speech tagging was addressed for analyzing participants' speech, as measured by types, tokens, nouns/(verbs+nouns) ratio, and the ratio in total lexical production.

Results showed contrasting lexical biases in Mandarin-speaking preschoolers and caregivers. We observed overwhelming nouns in utterances of Mandarin-speaking preschoolers with and without ASD, while their caregivers' speech consisted of more verbs than nouns in the dyadic interaction. Notably, Mandarin-speaking children with ASD demonstrated a more substantial noun bias than TD children, while more verb types and tokens were observed in TD children's speech. Additionally, lexical bias in caregivers' speech of children with and without ASD has no significant difference, as verb bias was observed in their input. Interestingly, caregivers of children with ASD produced fewer verb types than caregivers of TD children. Moreover, language production of Mandarin-speaking children with ASD significantly was correlated with their caregivers' lexical types and tokens, while TD children's lexical production was only influenced by their caregivers' lexical types.

This study supports that early noun bias is a language-universal phenomenon but provides evidence that language-specific features play a minor role in early lexical development. Mandarin-speaking preschoolers with and without ASD show noun dominance even though their caregivers' input is verb-biased. It has important implications for understanding Mandarin-speaking preschool children's communication features, highlighting the need for targeted language interventions for children with ASD."

07/19/2024 from 08:30 AM to 10:30 AM , room P429

'Baby talk' revisited

Alan Rumsey; Francesca Merlan; John Onga

In a study of English-learning infants, Ito et al (2018, Cognitive Science 42:1974-98) show that diminutives and reduplication in the lexical input at 9 months were associated with future vocabulary growth. Their analysis doesn't depend on any prior identification of the relevant forms as 'baby talk' (BT), but they do note that diminutives and reduplication (along with iconicity) are often attributed to BT in other studies. This raises interesting questions about how BT has been identified, and the extent to which it involves diminutives and/or reduplication. Most studies have followed Ferguson (American Anthropologist 66:103-114) in: 1) identifying BT based on what a given speech community regards as appropriate for talking to young children; 2) providing no systematic evidence for what are taken to be community norms in that respect; 3) providing little or no evidence of the extent to which forms identified as BT are used, either in adult speech or by children in adult-child interaction. Here we address those issues, and assess the cross-cultural applicability of Ito et al's findings, based on our longitudinal study of children's acquisition of Ku Waru, a Papuan language of Papua New Guinea. Our data include a 1.3 million-word longitudinal corpus of Ku Waru parent-child interaction, interviews with 10 of the parents about BT, and transcript-searches for the words they identify as BT. We find: 1) considerable differences among parents in what they identify as BT; 2) big disparities among words identified as BT in frequency of use; 3) no diminutives among words identified as BT, and few involving reduplication. A bigger role is played in those identifications by phonological simplification and local understandings of children's language learning, and how to facilitate it. In conclusion we argue for an approach that combines systematic study of such understandings with corpus-based analysis of BT usage.

07/19/2024 from 08:30 AM to 10:30 AM , room P429

Early language Development in four South African languages: Noun & Verb Bias and Morphological Onset

Frenette Southwood; Michelle White; Nomfundo Buthelezi; Heather Brookes

Much has been written about the existence (or not) of a noun bias in early child language. In this study, we establish whether there is a noun or verb bias in each of four understudied South African language varieties, specifically two Bantu and two West Germanic languages. We also examine whether there is a relationship between the number of nouns children have in their expressive vocabulary and the onset of use of noun morphology (such as plural marking), and between the number of verbs in children's expressive vocabulary and the onset of use of verb morphology (such as tense marking). Furthermore, we ask whether there are clearly identifiable ages for a spurt in productive vocabulary and a spurt in morphosyntactic development as identified for some other languages (see e.g., Kristoffersen et al., 2008). Previous research looking at this phenomenon has been conducted in the global North and has not included agglutinative languages with complex morphologies, such as many Bantu languages found in South Africa. Participants for this study are monolingual toddlers (aged 16 to 32 months) acquiring either Afrikaans, isiZulu, Sesotho, or South African English (n > 400). Data on

vocabulary size and content, and on grammatical markers were collected using the relevant language versions of the MacArthur-Bates Communicative Developmental Inventories. The novelty of this study lies in the large morphological and grammatical differences between the four languages, which allows a more generalizable conclusion. The results of this study may add to our limited knowledge on the manner in which the language of child speakers develops in lesser studied contexts and may inform the assessment and tracking of early language development for diagnostic and intervention purposes.

Individual oral presentations: Friday Noon

07/19/2024 from 11:00 AM to 01:00 PM , room P018

CHILD DISRUPTIVENESS MODERATES THE IMPACT OF PARENT SPEECH QUALITY ON CHILD LANGUAGE DEVELOPMENT

Fabio Trecca; Riikka Svane; Erika Hoff; Dorthe Bleses; Brett Laursen

"High-quality parent-provided language input correlates with favorable child language development outcomes. When parents engage in interactions with their children, such as reminiscing about past events, they provides fertile ground for enriching their children's language experiences. However, certain behavioral traits in children may affect their ability to turn a supportive linguistic and interactive environment into language gains. For example, recent findings show that child disruptive behavior can diminish the beneficial effects of shared book reading on language development.

This study investigates whether child disruptiveness (hyperactivity, conduct problems) in reminiscing conversations moderates the impact of rich parent speech on children's language development over time. N = 178 Danish parents and their 4- 6-year-old children reminisced about shared events in two home visits two years apart. The conversations were videorecorded. Parent speech was coded for quantity (rate of utterances and word tokens), linguistic quality (rate of word types and labeling of objects/actions, MLU), and interactive quality (rate of directives, questions [yes-no, close-ended, open-ended], and repetitions/expansions of child utterances). Child speech was coded for rate of utterances and word types and tokens , and MLU. Child disruptiveness was parent-reported.

The results show that parent linguistic and interactive quality predicts improvements in child language measures for children with below-average hyperactivity, but not for those with above-average hyperactivity. Conversely, the effect of parent linguistic and interactive quality on child language growth is positive for children with above-average conduct problems, but not for those with below-average conduct problems.

These findings suggest that impulsiveness/inattentiveness—a known negative correlate of child language skills—may act as a resistance factor that hinders the child's ability to transform positive environmental speech input into conversational skills. In contrast, conduct problems may serve as differential susceptibility factors, amplifying the positive effect of rich parent speech input. Both findings have important implications for intervention."

07/19/2024 from 11:00 AM to 01:00 PM , room P018

Child-Directed speech facilitates semantic role identification in English

Eva Huber; Balthasar Bickel; Sabine Stoll

"Recent research has shown that child-directed speech (CDS) is structured in such a way to optimise the extraction of parts of speech (Mintz, 2003; Moran et al., 2018) and word meaning (You, Bickel, Daum, & Stoll, 2021). Here, we ask whether CDS also facilitates the acquisition process of understanding the semantic roles of a specific argument of a predicate, a crucial part of the acquisition of morphosyntax in general.

We test this question by simulating the learnability of semantic roles in English using neural language models. We train the BabyBERTa model (Huebner, Sulem, Fisher, & Roth, 2021) on a small and a large training dataset (1.5 M tokens and 7.5 M tokens, respectively) from CDS from two longitudinal corpora (Lieven, Salomo, & Tomasello, 2009; Theakston, Lieven, Pine, & Rowland, 2001) and adult-directed speech (ADS) from spoken conversations taken from the British National Corpus (BNC, Consortium et al., 2007), i.e. four models in total. We extract contextualised representations of arguments from the neural language models, and feed these to a single-layer neural network that is trained to classify the semantic roles (Agent vs. Patient) of arguments. We analyse whether semantic roles are classified more accurately with arguments from utterances in CDS as opposed to ADS.

Our results show that semantic roles can be classified with high accuracy with both CDS and ADS (estimated mean accuracy of CDS small: 0.93, CDS large: 0.95, ADS small: 0.89 and ADS large: 0.91). The classification accuracy is decisively higher with utterances from CDS than ADS with a posterior pairwise difference of nearly 1. This suggests that CDS is better suited than ADS for learning to detect the semantic roles of arguments, an important cornerstone for learning the morphosyntactic features of a language."

07/19/2024 from 11:00 AM to 01:00 PM , room P018

The impact of parental communication style and frequency on Georgian child language acquisition

Tinatin Tchintcharauli; Nino Tsintsadze; Ana Menagarishvili; Sigal Uziel

Parental input plays a crucial role in early language acquisition. Studies have shown that infants who receive more responsive and interactive input from their parents tend to develop better language skills despite their spoken language and/or culture (Bruner, 1981; Tomasello, 1992a, 2000, 2005). The present study examines the effect of parental communication style and frequency of exchanges on the acquisition of Georgian child language. The study is based on an analysis of 24 hours of naturalistic speech samples of dyadic interactions between two monolingual Georgian-speaking children (a boy and a girl) and their primary caretakers. The dyads were video-recorded every month between ages 12 - 24 months (on average 4 hours per month). Sample files at intervals of 6 months were transcribed, coded and analyzed using CHILDES. Coding included inflectional morphology and interaction style (directive, re-directive and supportive). The analysis included frequency counts, MLU, MLT and correlations. We assumed that the frequency of communicative exchanges, number of words used during interaction and supportive interaction style positively correlate with children's Mean Length of Utterance in Morphemes (MLU-m) at 24 months of age. Our findings reveal that the children's vocabulary constituted around 10% of their parents' vocabulary. The number of words used by the parents during the interactions positively correlated with the MLU-m of the child (Spearman's rho=0.903, p<0.001), the frequency of exchanges, however – does not. The interaction style changes with age from a directive to a more supportive style. However, due to the small number of participants, the correlation between interaction style and MLU-m was not confirmed. Future research in this area would shed more light on the role of the interaction style in language acquisition.

07/19/2024 from 11:00 AM to 01:00 PM , room P018

Parental Behaviors Supporting Child Language Development at Early Ages

Magda Rivero; Rosa Vilaseca; María José Cantero; Clara Valls-Vidal; David Leiva

"Characteristics of caregiver's behavior when interacting with young children has been related to child language development (Dave et al., 2018; Hubbs-Tait et al., 2002; Newman et al., 2016; Rowe, 2012; Rowe & Snow, 2020; Schwab et al., 2018; Tamis-Lemonda et al., 2001). Our study contributes to the existing literature by providing data from Spanish families, on a range of parental behaviors referring to the various dimensions that have been associated with optimization of language development (affection and emotional warmth, responsiveness, encouragement and non-intrusiveness, and cognitive and linguistic support).

Our aim was to analyze the relation between parenting behaviors and child language development at early ages.

Participants were 90 children, 88 mothers and 76 fathers (who answered PICCOLO),

74 of them from the same families. Parental behaviors were assessed with the Spanish version of the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO) (Rivero et al., 2021; Roggman et al., 2013; Vilaseca et al., 2019a, b). Child language development was assessed with the Bayley-III scales. Mothers and fathers were asked to self-record, separately, a session lasting between 8 and 10 min playing with their child at home, in their usual way and with their own toys.

For the analysis, some sociodemographic variables were controlled. Bivariate analysis showed significant positive relations between mothers' responsive, encouraging and teaching behaviors and a child's language scores. Relations were found between fathers' encouraging and teaching behaviors and a child's language. Regression models indicate that maternal and paternal encouraging behaviors predicted 18% of the variability in the child's receptive language, and maternal responsive and father's teaching behaviors predicted 16% of the variability in the child's expressive language and the total language scores. The study provides new data that support the relevance of positive parental behaviors to improve a child's linguistic development."

07/19/2024 from 11:00 AM to 01:00 PM , room P429

Verb type, NP position and case marking in sentence comprehension in Spanish-speaking children

Anali Taboh; Carolina Gattei; Diego Shalom

"Speakers use different types of morphosyntactic and semantic cues to achieve comprehension. These cues have different weight in different languages. A relevant question is when and how language-specific differences arise

during development. There is evidence that German-speaking and Hebrew-speaking children aged 3 to 6;8 assign thematic roles in sentence comprehension based primarily on noun phrase (NP) order and that German-speaking children correctly use case marking cues over NP order rather late. We aimed to evaluate the progression of strategies employed by Spanish-speaking children for the integration of morphological case marking, NP order, and verb type in sentence comprehension.

We designed a sentence comprehension task following the truth-value judgment paradigm and constructed semantically reversible sentences in subject-verb-object (SVO) and object-verb-subject (OVS) orders with two types of verbs which can be used in both orders: activity verbs, with canonical order SVO as is general in Spanish, and object-experiencer psychological verbs, whose Experiencer surfaces as an object and whose canonical order is OVS, e.g., "¡A Burro le gusta Cerdo!" (DonkeyDAT cl.DAT likes PigNOM). Participants were 162 typically-developing Spanish-speaking children aged 3 to 9 years.

Comprehension improved significantly with age and was significantly better when the NP order matched the canonical order of the verb type. Comprehension of sentences with activity verbs in their canonical order was significantly above chance from age three onwards, while in non-canonical order this only occurred at age nine. For sentences with psychological verbs in their canonical order, performance was significantly above chance level from age five, but in non-canonical order it was not better than chance in any age group, indicating that children still relied on NP order more than case marking. For verbs whose lexico-semantic structure is atypical in Spanish, the ability to integrate all relevant morphosyntactic and lexico-semantic information might be developed later."

Posters

Tuesday Posters

07/16/2024

Improving Spontaneous Language Analysis: Identifying False Starts Automatically

Martin Kroon; Jan Odijk; Elise de Bree; Frank Wijnen

"Language is essential for daily functioning and wellbeing. It is therefore essential both to be able to easily identify language problems, as well as to monitor language intervention outcomes. Both are ideally based on spontaneous language analysis. Application of spontaneous language analysis in clinical and educational settings is, however, a highly labor-intensive procedure that requires the diagnostician to have fairly technical linguistic knowledge.

A solution to alleviate the process is to automatize it as much as possible by developing language-technological tools. SASTA ('Semi-Automatische Spontane TaalAnalyse') is such an application, developed for Dutch. It generates grammatical analyses of transcriptions of spontaneous language in accordance with different assessment methods (TARSP for young children (1–4 years), inspired by LARSP for English, and STAP for older children (4–8 years)). Although significant progress has been made, there are some remaining obstacles. One such obstacle is false starts.

False starts refer to a speaker starting an utterance, then interrupting themselves after a few syllables, and starting anew. Such a false start is most likely made because the speaker ran into trouble (lexical, grammatical or otherwise), or detects their own mismatch with the communicative intention. False starts are a frequent phenomenon in natural spoken language and occur more often in children with a developmental language disorder than in typically developing children. Therefore, information about the presence (and prevalence) of false starts is important. However, false starts pose an issue that critically affects the performance of SASTA and other natural language processing tasks.

In this talk we therefore report on findings concerning the automatic identification and reparation of false starts in children's language. We discuss and evaluate different ways of defining false starts. We also investigate the potential application of machine learning approaches, using CHILDES data annotated for false starts as training data."

Assessment tools, their adaptations, including CDI's

07/16/2024

PARENTAL REPORTS ON LANGUAGE IN PRESCHOOL CHILDREN – VALIDATION OF SLOVENIAN VERSION OF CDI-III

Barbara Penko; Damjana Kogovšek; Jerneja Novšak Brce

"In recent decades, researchers and clinicians have confirmed that parental reports can be a reliable source of information about the communication skills and different language domains of infants and toddlers up to 30 months of age. How reliable and valid parental reports are for older preschool children remains an open question. There are few studies that confirm the validity of standardised parental report instruments. They suggest that information obtained from parental assessment can be part of screening procedures, diagnostic process for developmental language disorder or can be used in research during this period of children's language development.

The aim of this research is to present the validation of the Slovenian version of the MacArthur-Bates Communicative Development Inventory III (SLO CDI-III). It was developed as a translation and adaptation of the Croatian version of the Communicative Development Inventory III (Koralje-III), which is based on the Swedish Communicative Development Inventory III (SCDI-III). The present study provides important information on the validity of parental report on language ability in preschool children aged 30 to 48 months for Slovenian language, which belongs to the Slavic languages and offers opportunities for cross-linguistic comparisons. Findings indicate that the Slovenian CDI-III has adequate psychometric properties and can be a useful tool for research and clinical practise."

Assessment tools, their adaptations, including CDI's

07/16/2024

Adaptation of the Index of Phonetic Complexity to Urdu

Saira Ambreen; Carol To

"Phonetic complexity is a correlate of the "production difficulty of different speech sounds, syllables, and words" (Jakielski, 2022, p. 20). The Index of Phonetic Complexity (IPC) was developed based on the speech acquisition data from English speakers. The features and aspects that were found to be acquired later are considered complex. The original IPC consists of eight factors. Each factor assigns scores for a different aspect based on the presence of complex features. Factors one, two, and six focus on singleton consonants. Factor three focuses on vowels. Factors four and five score the word shape and length, whereas the last two factors address the consonant clusters.

As the components of the phonological system and its phonotactic constraints vary across languages, it is essential to consider these factors while adapting such tools to other languages. This study presents the adaptation of IPC to Urdu (IPC-Ur). All IPC factors were considered during the adaptation and modifications were made based on the Urdu speech sound acquisition patterns. All factors, except four and five, were modified based on the language-specific features and available acquisition data. The current study presents all the considerations that were made during the adaptation and the reasoning behind them.

IPC-Ur scores individual segments of the word, word shape, word length, and the variegation among the individual segments. Like the original IPC, it provides the scores for the individual factors, as well as a cumulative score for the whole word indicating its overall complexity. IPC-Ur can not only be useful in the independent analysis of child speech but can also provide a relational analysis by comparing the complexity of child productions with the target/adult productions. It can also be beneficial for assessing the development of phonetic complexity across the age."

Assessment tools, their adaptations, including CDI's

07/16/2024

Optimizing language environment measures in children's bilingualism research

Emma Verhoeven; Merel van Witteloostuijn; Ora Oudgenoeg-Paz; Elma Blom

The amount of language input is an important predictor of children's language development. For bilingual children, the amount of language input per language may vary strongly between families. It is currently unknown what the optimal approach is to quantify bilingual language input. The present study compares the two most used methods, parental questionnaires and audio recordings, in their accuracy to quantify bilingual language input. Further, a novel method to quantify language input will be explored by combining parental questionnaires with daylong audio recordings. As the quantity of language input is known to predict vocabulary scores, the different methods are correlated with children's vocabulary scores. We assume that the more accurate the method is, the stronger the correlation with vocabulary will be. In this talk, we will present results from 31 Turkish–Dutch and 21 Polish–Dutch bilingual children (36 to 72 months). Children's vocabulary is measured via the Cross-linguistic Lexical Task (CLT) in both languages. We administered the parental questionnaire for Quantifying Bilingual Experience (Q-BEx; De Cat et al., 2022) and collected daylong audio recordings using the Language Environment Analysis (LENA) system. Sampled LENA data is manually coded for speaker, language, and child-directed speech. Both existing language environment methods result in a proportion of the current language input (e.g., 75% Dutch, 25% Turkish). The novel measure combines the benefits of questionnaires (determining language input over a longer period of time) with those of daylong audio recordings (using language observations instead of parental estimates) and results in a quantitative measure of language exposure. We hypothesize that the combined method will outperform the individual methods. Currently, raw data is being processed by bilingual research assistants. The study is preregistered on the Open Science Framework. Future research can use this study to make more informed decisions about measuring language environments of bilingual children.

Assessment tools, their adaptations, including CDI's

07/16/2024

Language development during the war: designing CDI-III for Ukrainian

Ewa Haman; Olena Belyavska; Grzegorz Krajewski; Karolina Muszyńska; Paweł Levchuk

"Ukrainian is highly understudied in the context of child language. There is also a scarcity of assessment tools for Ukrainian-speaking children. Since the onset of the full-scale war Ukrainian children may face severe and prolonged adverse experiences affecting their general and language development (Kaplan et al. 2016). Here we

test the potential effect of war experiences on language development by comparing children based in Ukraine vs refugee (fled war to Poland) vs migrant (moved before the war to Poland) children.

We use a pilot Ukrainian version of Communicative Development Inventory-III (Marchman et al. 2023) based on the Polish pilot version.

CDI-III-UKR currently includes three scales: (1) lexical (244 items), (2) grammatical-1 (21 alternatives comparing sentences of different syntactic complexity, parents are to choose the alternative similar to what their child says), (3) grammatical-2 (15 direct questions concerning child's use of particular syntactic structures).

Overall, parents of 134 children aged 34-48 months (72 girls) filled in the online questionnaire in early 2023 (a year after the Russian aggression). For each of the three scales, we fit binomial logistic regression models with numbers in each age group as weights and centred age and group as predictors. We obtained a strong main effect of age. The percentage score changed with age from ca. 20% to 75% for each scale. No differences between the three groups were significant. We conclude that irrespective of the migrant-refugee status Ukrainian 3-year-olds develop their language similarly.

The data we gathered will be used for psychometric analyses and item selection for the final version of Ukr-CDI-III to be normed in the future. We will use principal component analysis, Cronbach's alpha and logistic regression with age for each scale to select the best items."

Assessment tools, their adaptations, including CDI's

07/16/2024

Development of Polish adaptation of CDI-III

Grzegorz Krajewski; Karolina Muszyńska; Ewa Haman

"There is a growing number of adaptations of Communicative Development Inventories CDI-III, parental questionnaires assessing language development of children aged 3-4 years. Here we present the development of Polish adaptation, inspired by the Swedish instrument (S-CDI-III; Eriksson, 2017). PL-CDI-III consists of the lexicon checklist and two grammar scales and is designed for children aged 34-48 months (keeping an overlap with CDI:Words&Sentences for younger children). Large initial item pools were generated and final sets were selected in two online pilot studies.

For the pool of 245 words we used S-CDI-III translations and culturally appropriate alternatives (Mieszkowska, 2018) plus norming data of the PL-CDI:WS (Smoczyńska etal., 2015) to select content words from the "sample utterances" and "longest sentences" sections based on their frequency growing with age.

For the grammar pool we identified 26 constructions, for each we generated 2-3 complexity alternatives (example sentences with vs without the target construction) and a direct question about it. To identify the best constructions and format of questions for each (alternatives vs direct questions) we collected responses of 161 parents of 28-55 month-old children (pilot 1). We calculated consistency of answers using Rand index and their correlations with age and using these two criteria selected 21 alternatives and 15 direct questions.

We then collected responses to all three scales from 261 parents of children 33-48 months old (pilot 2). For each scale we used principal component analysis, Cronbach's alpha and logistic regression with age to select best items. For the final word checklist we kept 100 items within five categories (four from S-CDI-III, one new) with nouns, verbs and adjectives in each. The final complexity alternatives scale consists of 16 items and there are 8 direct questions in the final set. Both grammar scales concern mostly complex syntax and some particularly difficult inflections."

Assessment tools, their adaptations, including CDI's

07/16/2024

Morphosyntactic Development in Albanian-Speaking Children: Designing and Piloting Part II of the CDI

Xhulia Samanta Dule; Shanley Allen; Enkeleida Kapia

Evaluating a child's language skills during their early years is essential to plan for an early intervention and maximize their capacity for learning. However, for Albanian, an understudied Indo-European language with 6-7 million speakers in Albania, Kosovo, and around the world, reliable assessment tools are missing due to an existing gap in research. The MacArthur-Bates Communicative Development Inventory (MB-CDI) is one such tool that has been adapted for many languages (Bleses et al., 2008). In the case of Albanian, only the first part of American English MB-CDI Words and Sentences, which focuses only on vocabulary, has been adapted, leaving

a gap in assessing more advanced language skills.The present study describes the process of developing Part II of the Albanian CDI, specifically focusing on early grammar development, which is divided into five sections: Section A, Word Endings, assesses the child's use of word endings related to case, plural, verb marking etc. Section B, Words Forms, evaluates word forms, nouns and verbs. Section C, Word Endings, checks for proper use and errors in word endings. Section D, Examples, asks for the three longest sentences the child has recently said. Section E, Complexity, explores the complexity of the child's morphosyntactic skills. Additionally, a pilot study involving 56 children aged 18 to 68 months was conducted using this tool. The aim was to gather evidence-based knowledge into the morphosyntactic development of Albanian-speaking children and to improve the questions' quality and reliability for future use. Moreover, this research is the first attempt to assess syntactic features among Albanian children, including subject, predicate, object, adjunct and sentence types.This report plays a crucial role in creating the complete Albanian CDI, in order to standardize this language assessment tool, for use by professionals, parents and researchers.

Assessment tools, their adaptations, including CDI's

07/16/2024

Are SLTs ready to use assessment based on non-linear phonology in their daily professional lives?

Ana Catarina Baptista; Carolina Marques; Filipa Gonçalves; Margarida Fernandes; Maria Afonso; Susana Rodrigues

"Background: Children with SSD constitute a heterogeneous group, differing in variables such as age, severity, etiology, speech errors, and involvement of other aspects of the linguistic system, leading to difficulties in linguistic profile assessment and diagnosis.

The phonology assessment began by focusing on the segment, from a linear phonology perspective. From the 1980s onwards, several studies corroborated the existence of a close relationship between the segment unit and the remaining phonological units, namely prosodic ones, meaning that phonological analysis also began to include suprasegmental aspects, such as accent, syllable, and the prosodic word which, based on a hierarchical structure, imply a non-linear phonology analysis perspective (Freitas & Santos, 2017). In Portugal, there is a gap in practical guidelines for segmental and suprasegmental assessment of SSD, which is essential for defining therapeutic objectives that allow adequate intervention planning.

Aim: To investigate the perception of SLTs on the importance of creating a guide for speech analysis of children with SSD in the light of non-linear phonology

Methods: a questionnaire was administered to a group of 16 speech therapists to assess their familiarity with suprasegmental aspects and their applicability in the assessment of SSD.

Results: The responses demonstrated unanimity regarding the importance of analyzing distinctive features to understand the child's phonological system. However, a significant discrepancy was found regarding the importance that speech therapists associate with the suprasegmental aspects, the syllable, and other prosodic aspects.

Conclusion: This fact allows us to verify that there is still no uniformity regarding a more integrative vision of the analysis of the phonological system, which supports the relevance of a guiding document for the non-linear analysis of phonology in SSD cases."

Assessment tools, their adaptations, including CDI's

07/16/2024

Automatized language and reading screenings for children from different language- and age-groups

Maren Eikerling; Maria Luisa Lorusso

"Considering possible misdiagnoses in language assessment of bilingual children, new diagnostic tools are needed to reliably identify Developmental Language Disorders (DLD) or Developmental Dyslexia (DD). In addition to static tasks across linguistic areas and languages spoken by the children under assessment, Dynamic Assessment captures the child's learning potential using a „test-teach-retest" approach, operating independent of previous knowledge.

Given the heterogeneity of children under assessment, a modifiable screening platform was developed so that static and dynamic tests can be developed and administered in various contexts. Screenings can be carried out in face-to-face as well as in remote settings. For children aged 4 to 6, tasks targeting the detection of DLD

(nonword repetition, grammaticality judgements and word comprehension) were implemented while for children between 7 and 9, tasks on reading speed and accuracy, grammaticality judgement and Rapid Automatized Naming (RAN) were administered. Accuracy and speed of the children's responses were automatically recorded and scored (with the exception of nonword repetition and DNWL naming, which needed manual input by the examiner).

Within a series of validation studies, N = 109 children belonging to one of four language groups (Italian-German, English-Italian, Mandarin-Italian, Spanish-Italian) were administered either a bilingual DLD or DD screening in face-to-face or remote settings. Across studies, significant associations emerged between the results obtained in the screening tasks and caregiver questionnaires as well as standardised tests. Exploratory analysis of the diagnostic accuracy indicates that the single screening task scores as well as the overall total score significantly contribute to DLD or DD (risk) identification. The simultaneous consideration of both languages spoken provides valuable information guiding the interpretation of the results. Dynamic tests can be applied regardless of the child's L1 and of L2 mastery. Results further indicate that web-based automatized tasks can be administered remotely while keeping their reliability."

Assessment tools, their adaptations, including CDI's

07/16/2024

The magic of cartoons? How English-learning Animations can Enhance Child L2 Acquisition.

Ruoyu (Lexie) Huang; Twila Tardif; Shuhong Mei

With the increasing popularity of second language-learning media for young children, this study raises a crucial question: how much do these materials actually enhance children's acquisition of language? A total of 71 preschool-aged Mandarin-speaking children (Mage = 5.76, SD = 0.59 years) participated in a week-long intervention study in Nanjing, China. Across two visits, we assigned children to two experimental conditions: (1) with two immersive English-language animations focusing first on verbs; and (2) with two animations focusing first on possessives. Children from each condition were encouraged to watch their condition-related animations as many times as they wanted between visits, along with a new take-home animation that was neither verb- nor possessive-focused. A second session exposed children to the opposite condition so that all children viewed both possessive- and verb-focused animations. Children's performance on target verb and possessive items for both comprehension and production was measured after each animation-viewing session, in addition to general English verb tense and possessive marking. Overall, our results suggest that preschool-aged Mandarin-speaking L2 learners can benefit from brief (3-4 minutes) exposures to targeted English-learning animations. Moreover, consistent with first language acquisition results in both English and Chinese, some target language categories appear to be easier to acquire than others (e.g., possessive grammar -'s > verb past tense grammar). In addition, comprehension measures for both vocabulary and grammar appear to be easier than production. Moreover, different amounts of exposure might be required for successful learning of different target language categories in L2 depending on their difficulty and relative ease of L1 to L2 transfer. These findings not only demonstrate the potential for well-designed language-learning applications to assist with second language learning, they also speak to limitations, challenges, and future directions for how we might examine the efficacy of language-learning media.

Bi-/multilingual acquisition in typically developing children

07/16/2024

Exploring Intentional Bilingualism among Polish children

Anna Biedrzyńska; Magdalena Kochańska; Sylwia Wajs; Natalia Banasik-Jemielniak

"Intentional bilingualism (IB) (also discussed under the notions of artificial bilingualism, non-native bilingualism (NNB), monocultural bilingualism, elective and cultivated bilingualism) refers to the conscious effort on the part of parents or carers to expose children to foreign language(s) aside their native, in a way that would imitate the natural setting and invite a degree of L2 acquisition. Although this type of bilingualism is not an entirely novel phenomenon, it is relatively new in eastern Europe, including Poland. Since IB has raised some concerns in terms of its influence on L1, it requires more systematic research.

This study is a part of the larger project on morphosyntactic abilities Polish-English and Polish-German bilinguals with the use of the LITMUS Sentence Repetition Task (SRep; short, Polish version; Przygocka et al., 2021) and Cross-linguistic Lexical Task (Haman et al., 2021) to vocabulary control. So far we have analyzed the profiles of 24 children raised in intentional bilingualism (IB) and compared their results with monolinguals and native bilinguals, matched on age (5;0-6;11) and sex. There was no significant difference between IB and

monolingual children in SRep and CLT in these preliminary findings. Neither did we find support for the claim that IB can hinder the child's language development in their L1, however, we plan further studies where language exposure is taken carefully into consideration.

Our goal in this study is to collect larger data and try to estimate the role of exposure in IB and factors that include parents' education, place of living, family size and age of acquisition. Larger data samples will have been analyzed by spring 2024."

Bi-/multilingual acquisition in typically developing children

07/16/2024

The effect of cue prominence on pronoun interpretation in monolingual and bilingual children

Dato Abashidze; Natalia Gagarina; Elna Hafner

"Findings on pronoun processing have revealed that the prominence of an antecedent as a pronoun referent is influenced by various cues such as thematic role, order of mention, and grammatical constraints. Previous language developmental studies which examined the effect of order of mention and grammatical role on ambiguous pronoun resolution produced mixed results [e.g., Arnold et al., 2007; Blything et al., 2021; Brandt et al., 2009]. Continuing this line of research, the current study aims at a deeper understanding of the processes involved in ambiguous subject and object pronoun interpretation in German in monolingual and bilingual children (Georgian L1).

In two eye-tracking and sentence-completion studies, participants (N = 24 in each group, age= 6 to 8 years) see a depicted scene (e.g., a hedgehog, a hamster, and a campsite) and listen to German sentences (e.g., Der/Den Hamster begrüßt den/der Igel an dem Zeltplatz. Er mag das blau Zelt / Ihn ermuntern die Farben, "lit trans: The hamsterNom/Acc greets the hedgehog Acc /Nom at the campsite. lit trans: HeNom likes the blue tent. /HimAcc encourage the colors."). The morphological distinction between the determiners in the noun phrases dictated both word order (SVO/OVS) and grammatical role in the antecedent sentences. Grammatical role effects were examined through the resolution towards the subject or object antecedent when processing the pronoun in the following sentences.

The preliminary results of the sentence-completion studies indicate that the understanding of pronouns in monolingual and bilingual participants were equally influenced by the order of mention. Regarding grammatical role parallelism, monolinguals more frequently chose the subject antecedent when encountering the subject compared to the object pronoun. Bilinguals, however, revealed less preference for choosing the subject antecedent. These findings (which will include eye-tracking data) are discussed in relation to cue weighting during pronoun resolution by monolingual and bilingual children."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Construction of Polish syntactic structures by bilingual children

Magdalena Kochańska; Anna Biedrzyńska; Aleksandra Siemieniuk; Natalia Banasik-Jemielniak

"It is a known fact that bilingual children differ in terms of language processing compared to monolingual children, and their productive skills may be weaker in comparison to the monolingual norm (Haman et al., 2017; Meir et al., 2017). One of the tools that has been used to measure those differences is Sentence Repetition (SRep), which is not only an effective tool for distinguishing children with language impairment across different languages but also helps to gain a deeper insight into various children's command of vocabulary and syntax (Polišenská, Chiat & Roy, 2015).

The present study aims to compare the grammatical competencies of Polish monolinguals and bilingual children (speaking Polish as one of their languages) using the short Polish version of the LITMUS SRep (Przygocka et al., 2021). We plan to analyze syntactic structures and compare grammatical errors in three groups of children: Polish monolinguals (n=30), Polish-English bilinguals (n=30), and Polish-German bilinguals (n=30), aged 5 and 6.

Our initial analyses of the study results showed that there was a statistically significant difference in several categories between Polish-German bilinguals (but not Polish-English bilinguals) as compared to the Polish monolingual group (e.g. correctness of sentence order, changing content and function words, incorrect verb conjugation, incorrect pronoun). Moreover, it was the Polish-German bilingual group that scored significantly

lower in correctness of sentence order in comparison to the monolingual (z=3.465; pbonf <.001) and Polish-English bilingual groups (z=2.869; pbonf =.012).

The study will allow for a better understanding of the way monolingual and bilingual children deal with SRep tasks in terms of accuracy of sentence patterning, use of lexical and phrasal categories, and the role of the second language. All the language data is planned to have been analyzed by the end of June 2024."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Bilingualism across the pond. Comprehension of wh-questions by Greek heritage children in US and UK

Vicky Chondrogianni; Aikaterini Pantoula; Antonella Sorace; Richard Schwartz

"In this study, we investigated how individual differences in the bilingual experience of child heritage language (HL) speakers residing in two majority English-speaking countries, the US and the UK, modulate the comprehension of HL complex structures. We examined how proximity of the country of residence (US/UK) to the country of origin (Greece) shapes heritage speakers' experience and, subsequently, their HL profile and outcomes.

Twenty-nine 6-to-12-year-old (mean:9;5 years) Greek-English heritage children residing in New York City (H-US) and thirty 5-to-11-year-old (mean:8;1 years) Greek-English heritage children in Scotland (H-UK) participated in a timed picture selection task involving reversible transitive actions performed by animals. We examined children's accuracy and response times when comprehending referential subject and object which-questions carrying different case-marking cues: on the wh-phrase and the second NP (double-cues condition), only on the wh-phrase (early cues), only on the second NP (late-cues). H-UK children were of first- and second-generation; H-US children were of second- or mixed- (one parent first, other parent second) generation. H-UK children had later age of onset to the majority language (AoO ML) and had higher current HL exposure than the H-US children.

Across both locations, children exhibited higher accuracy on and were faster to respond to subject than on object which-questions. The H-UK, despite being younger, were more accurate than the H-US children on object which-questions, where accusative case-marking does not map onto canonical word order, as the first NP is the object/patient and the second NP the subject. Questions with double-cues and late-arriving cues elicited higher accuracy, suggesting recency effects. H-UK children had better knowledge of case, which along with exposure, and later AoO ML modulated accuracy and latencies in both locations, albeit differentially depending on the country of residence and exposure patterns. These results highlight how bilingual experience in different countries of residence shapes HL outcomes."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Diverse Trajectories in the Acquisition of Lithuanian Child Heritage Language Morphology

Skirmantė Gribauskienė; Ineta Dabašinskienė

"The Lithuanian-speaking diaspora, numbering 1.3 million people worldwide, includes approximately 150,000 school-age children of Lithuanian descent as of 2021. These children often grow up in bilingual environments, using Lithuanian alongside the languages of their host countries. This linguistic context provides a unique opportunity to investigate the acquisition of heritage Lithuanian within a sizable group of children residing in two distinct countries, Ireland and Norway.

Despite parental support and some educational assistance, these children exhibit varying levels of proficiency and follow diverse developmental paths in acquiring the morphology of their heritage language. Theories of language contact suggest that languages used by bilingual speakers interact differently across domains, leading to systematic changes influenced by language transfer (Montrul 2022, Polinsky 2018). Our study describes the morpho-syntactic changes in heritage Lithuanian when in contact with typologically different languages like English and Norwegian.

We have performed an extensive analysis of noun and verb inflectional morphology using semi-spontaneous picture-based narratives obtained through the Multilingual Assessment Instrument for Narratives (MAIN, Gagarina et al. 2019) and other experimental tasks. Our study involved 60 typically developing bilingual children and an age-matched group of 20 monolingual Lithuanian-speaking children (ages 4;0 to 6;11).

Our findings revealed similar types and quantities of morphological errors in both groups of children despite the morphological complexities of the majority languages involved. We identified system-internal and external factors causing changes in the acquisition of specific morphological categories, particularly noun case system and verb aspect/tense. In summary, our research provides evidence for contact-induced changes in the acquisition trajectories and highlights the impact of limited input on vulnerable linguistic categories within child heritage language development."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Impact of Linguistically Diverse Language Exposure on Children's First Words

Teresita Garduno; Janet Bang

Children's early language production is linked to their language exposure in the home (Marchman et al., 2017; Hoff et al., 2012). However, for many families from diverse language backgrounds, their home language may differ from the dominant community language. In this work, we investigate how home and community settings impact the production of linguistically-diverse children's natural/spontaneous first words. We recruited English and Spanish-speaking families (>50% English or Spanish-exposure) with young children (M=17.12, SD=3.85, range=12-25 months); families were living in an English-dominant city. Bilingual exposure was operationalized by >20% in one language (e.g., Byers-Heinlein, 2015), collected in a semi-structured interview. Over 6 weeks, caregivers reported the three most recent utterances, using a text-delivered survey sent at pseudo-random times (2 texts/day, 5 days/week). Utterances (M=72.96, SD=43.85, range=15-144 utterances) were measured using proportions per language/mixed language. Preliminary analyses revealed that monolingual English-exposed children (n=4; 100% English exposure), produced 100% English utterances (weeks 1-6 M=1, SD=0). For monolingual Spanish-exposed children (n=5; M>89% Spanish exposure), caregivers reported relatively high proportions of Spanish utterances each week (weeks 1-6 Ms=.69-.79, SDs=.23-.31), yet these caregivers also reported some English utterances (weeks 1-6 Ms=.29-.54, SDs=.05-.33). Finally, bilingually-exposed children (n=5; M=37% English exposure/M=63% Spanish exposure) demonstrated both Spanish (weeks 1-6 Ms=.63-.90, SDs=.10-.40) and English utterances (weeks 1-6 Ms=.28-.71, SDs=.18-.53); 1 caregiver reported lower proportions of mixed utterances (weeks 1-6, .07-.17). These findings demonstrate that growth of linguistically-diverse children's early first words is influenced by home and community settings. Ongoing analyses are projected to analyze Spanish-English bilinguals (n=20) MLU and characterize the words that appear in each language group.

Bi-/multilingual acquisition in typically developing children

07/16/2024

Parent and Child Language Profiles Predict Language Choice During Bilingual Book Reading

Caitlyn Slawny; Melina Knabe; Margarita Kaushanskaya

Bilingual storybooks are designed to be read in two languages, yet limited research has examined how parents use bilingual books. We assessed how bilingual parents (M age=35.1 years; 35 females) read bilingual books to their children who were between 4;0 and 5;11 years (M age=61.8 months, 26 females), and how language profiles affected their language choice. Forty-four Spanish-English bilingual parent-child dyads read bilingual books as they "would normally read at home". Interactions were video recorded and later transcribed. Parents also completed demographic and language background questionnaires, and reported on their children's language exposure. Children's language ability was measured using the Bilingual English-Spanish Assessment (BESA). Across all book readings, more parents read solely in Spanish (52.3%) as opposed to in both languages (31.8%) or solely in English (15.9%). There were no differences in language dominance, proficiency, or socioeconomic status between parents who read in both languages versus only in English. However, parents who read in both languages were more English-dominant, had higher socioeconomic status, as well as higher English speaking and reading proficiency (ps<.01) in comparison to parents who read only in Spanish. Analyses predicting language choice (at the utterance level) for reading (59.8%) or extra-textual talk (40.2%) showed that parents' language dominance significantly predicted language choice, e.g., English-dominant parents used more English in their interactions (p<.01). The proportion of utterances where parents were reading vs. engaging in extra-textual talk during the interactions also depended on their children's language ability: Parents whose children had higher language abilities, as measured by the BESA, spent a higher proportion of utterances reading as opposed to engaging in extra-textual talk (p=.002). This work reveals that bilingual books are used differently by families based on parents' and children's language profiles.

07/16/2024

Linguistic considerations to reduce bias in the language assessment of child Pidgin (Hawai'i Creole)

Bethany Schwartz; Kerrie Chitwood; Christine Fiestas

"Speakers of non-standardized language varieties including Pidgin (Hawai'i Creole) continue to be at-risk of misdiagnosis of developmental language disorder especially when the language variety allows for forms that resemble constructions associated with developmental language disorder in English (Rice et al., 1995). Some salient differences between Pidgin and English tense and finiteness marking include the free morpheme past tense wen, optional null-marking of tense/finiteness (plain-form), invariant waz, and zero-BE forms.

The study draws upon a corpus of children's narrative retellings across Hawai'i. Self-identifying adult Pidgin-speakers rated audio-samples (grades K-3rd) on a Likert-type scale and the 16 most consistently Pidgin-rated(PR) and 16 most English-rated(ER) files were transcribed and analyzed. When we examined for production of developmental errors (i.e., things that are not attributable to Pidgin grammar such as overgeneralization of regular past -ed) PR children (M= 1.75, SD= 1.53) were not statistically different from ER children (M= 1.56, SD= 2.5) (Mann-Whitney U=67.5, p=.34). These expected results are only observed when zero and null tense forms are correctly attributed Pidgin rather than being marked as a developmental error. When a clinician is not familiar with linguistic differences between Standardized American English and an unfamiliar dialect or language difference, differences in linguistic productions could be conflated as errors. For example, if zero-BE, invariant waz, and plain-form were to be counted as developmental errors, the Mann-Whitney U test indicates an erroneous result that PR children (M=8.81, SD=4.94) made significantly more errors than ER children (M=3.31, SD=3.09) (U=207, p=.0029) with a large effect size r=.53. These results demonstrate how bias could be introduced into the diagnostic process of children who are Pidgin speakers.

Findings from this small-scale study provide evidence for the importance of distinguishing between language difference and language disorder and have implications for reducing bias in language assessment for this historically underserved population."

07/16/2024

Discourse-pragmatics: Subject use in Spanish heritage and second language children

Ana Fernández-Dobao; Julia Herschensohn; Stefana Vukadinovich

"In null subject (NS) languages, mastery of null/overt subject use requires prolonged acquisition involving maturation of pragmatic-discourse faculties. Spanish adults prefer omission when the topic is not changed or focused, while children (2-10 years) gradually approximate adult usage of NSs. Spanish-English bilingual children in a majority English environment overuse lexical and pronominal subjects compared to same-age monolinguals. In this study, we examine subject realization by Spanish heritage (HL) and second language (L2) children (9-10 years) in 50:50 Spanish-English dual language immersion (DLI), a setting that provides enriched Spanish input.

Our participants were 45 HL and 93 L2 children in a US English-Spanish DLI program, and 40 Spanish majority controls. They completed a meaning-focused writing production task, an email to a pen pal. Written texts were analyzed for lexical, pronominal, and null subject distribution, with a focus on third- and first-person singular (IIIsg, Isg).

For IIIsg realization, there were no significant differences between the three groups. In topic continuity contexts, NSs were favored by controls, HL, and L2 children. In topic shift contexts, lexical subjects were preferred by all three groups. However, children behaved differently in their realization of Isg subjects. HL children produced significantly more pronominal subjects than children in the control group, while L2 children produced significantly more overt pronominal subjects than both controls and HL children.

Our data shows that despite the rich input of DLI, HL children have difficulties with the pragmatic distribution of null and overt subjects, but only for Isg. We argue that the differential distribution of NSs is related to the complexity of this syntax-pragmatic interface and the influence of English. We explain the preponderance of Isg pronominal subjects in HL and L2 production in relation to frequency in the input and the self-referential nature of the pen pal task."

07/16/2024

Examining spontaneous growth of first words and phrases among linguistically-diverse young children

Krittin Srisajjakul; Janet Bang

While there are tools in research to capture children's vocabulary knowledge (e.g., parent-report vocabulary checklists), there are currently few validated tools to capture children's naturally-occurring spontaneous first words and phrases. Moreover, vocabulary checklists present a challenge for diverse linguistic backgrounds, where parents must consider one language at a time, and we know little about children's natural language productions. In this proof-of-concept study, we examine the validity of a novel text-delivered tool (Child Behavior Survey) to capture parent-report language observations from young children's (M=17.12, SD=3.85, range=12-25 months) spontaneous speech over five weeks (n=26, projected final sample n=40). Critically, recruitment criteria included linguistically-diverse backgrounds (>50% English or Spanish exposure). Each family received 10 texts/week for five weeks (2 texts/day, 5 days/week) at pseudo-random times, which asked them to note the three most recent things their child said (e.g., M3L measure in the MacArthur Communicative Developmental Inventories (CDI); Marchman et al. 2023), for a total possible 150 utterances/child. On average, families responded to the majority of the texts (M=76%, SD=20%, range=16%-100%). After excluding babbles and unclear entries (M=37%, SD=29%), we still found a notable number of utterances with words for the majority of families (M=72.96, SD=43.85, range=15-144 utterances). We then averaged responses by child and by age and found a strong positive correlation between age in months and average MLUw (r=.78), indicating preliminary data to support the validation of this tool to capture growth. Ongoing analyses will examine concurrent validity of children's language productions with the CDI short form, and examine language reporting patterns in monolingual and multilingual children. This new tool presents exciting directions to observe children's spontaneous and natural production of speech across diverse linguistic backgrounds.

Bi-/multilingual acquisition in typically developing children

07/16/2024

Role of Language Exposure at Home and School on Longitudinal Bilingual Spanish-English Competence

Joseph Hin Yan Lam; Jing Zhang; Elizabeth Peña; Lisa Bedore; Ronald Gillam

Language exposure is associated with bilingual language competence. However, the role of language exposure at home and school on bilingual language competence respectively was not explored in early bilingual children. Language exposure at home is more related to community language use while that at school is more related to knowledge and academic concept acquisition. Understanding the role of language exposure across settings and their relationship to language competence can help examine the nature of different language environments. 165 Spanish (L1)-English (L2) bilingual children were assessed on bilingual oral language competence (semantics and morphosyntax) in both kindergarten and first grade in the United States. The participants were from three different types of bilingual programs, namely English-only with Spanish support, early-exit, and late-exit bilingual programs. In addition, language exposure at home and school (both English and Spanish) was reported by caregivers and teachers respectively. Correlation analyses showed both language exposure at home and school had weak to moderate significant correlations with bilingual oral language competence measures in kindergarten and first grade. Regression analyses showed language exposure at home uniquely predicted English morphosyntax and Spanish semantics in first grade, after controlling for demographics, language proficiency in kindergarten, and language exposure at school. In addition, language exposure at school uniquely predicted Spanish morphosyntax in first grade after controlling for demographics, language proficiency in kindergarten, and language exposure at home. The results suggest home language exposure can facilitate concept building and provide the chance for bilingual children to practice English morphosyntax while school language exposure can facilitate the acquisition of Spanish morphosyntax. The different roles of language exposure in home and school environments suggest the importance and different roles of bilingual environments in both home and school.

Bi-/multilingual acquisition in typically developing children

07/16/2024

Foreign-language speech segmentation in ab initio child learners

Katie Von Holzen; Sophia Wulfert; Marie Schnieders; Holger Hopp

"When adults segment words in a new language, they continue to apply sublexical, phonotactic cues from the L1 (Finn & Hudson Kam, 2008) and benefit from lexical overlap in form and meaning with L1 equivalents (i.e.

cognates: English: /kraʊn/; German: /kroːnə/; noncognate: English: /skɪn/; German: /haʊt/; Shoemaker & Rast, 2013). In school-aged children, foreign-language segmentation is under-studied. In two studies, we examine the role of developing L1 sublexical and lexical knowledge on German primary-school students' segmentation of English speech before they receive instruction in English.

113 German 6- to 10-year-olds listened to English sentences followed by an isolated probe-word that either did (target) or did not (lure) appear in the sentence. Children indicated via button press whether they had heard the probe word in the sentence (word acceptance). In Study 1, target pseudowords appeared in a context which provided a clear L1-German phonotactic cue to a word boundary (e.g., lv; dal_vouchen) or an L1-ambiguous cue (kv; dack_vouchen). In Study 2, target words were English-German cognate and noncognate words (She reduced her crown/skin mursk to poverty). We also assessed phonological awareness in a phoneme-manipulation task (Bialystok et al. 2003).

Higher acceptance rates for targets than lures show that children were able to segment and subsequently recognize all target words, a difference that improved with increasing phonological awareness skills. Unlike adult FL learners, there was no evidence at the group level that primary-school students use L1 phonotactic cues (Study 1) or benefit from form-based lexical overlap with their L1 (Study 2) when they begin learning a new language. However, exploratory analyses revealed that the children with the lowest receptive English skills (gained through passive exposure outside of school) did rely on L1 phonotactic cues, suggesting a role for L1 phonotactic cues in speech segmentation at an early stage of L2 acquisition."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Stance taking in Spanish-English bilingual preschoolers´ personal narratives

Martha Shiro; Erika Hoff

"Narratives, in general, and personal narratives in particular, reflect the culture in which the speaker is immersed. Then, how do bilingual children, who are exposed to two languages and two cultures simultaneously, adapt their narratives to the corresponding norms? Studies on bilingual adults show that the language in which the story is told has an impact on their narrative production. The purpose of this study is to determine how bilingualism affects preschool children´s relating of personal experiences, particularly, how they position themselves as they build the story in each language.

We collected personal narratives in English and in Spanish from 19 bilingual and 12 English speaking five-year-old typically developing children, using the same prompts. As narratives consist, not only of a sequence of events, but also of evaluative expressions that convey the speaker's stance, all of which give meaning to the story, we analyzed the narrative structure and the evaluative expressions to determine how their narratives are organized and how perspective is being built by bilinguals in Spanish and in English and how they compare to their monolingual English-speaking peers. The findings suggest that despite bilinguals' lower scores on vocabulary tests, their performance in English is very similar to monolinguals. Their performance in Spanish, however, is weaker, as fewer narratives are produced, there is more code-switching into English, and the narrative stance is unclear in many cases due to the lack of evaluative expressions. The bilinguals make use of more descriptive elements, and expressions referring to emotions and intentions, as they build the narrative stance in English and in Spanish, whereas the monolinguals use more cognitive expressions and reported speech. This study focuses on how bilingual preschoolers develop oral narrative skills, and it can help teachers in facilitating the development of literacy skills"

Bi-/multilingual acquisition in typically developing children

07/16/2024

When majority language matters for heritage language outcomes (and when it doesn't)

Evangelia Daskalaki; Aretousa Giannakou; Christina Haska; Vicky Chondrogianni

"Much research examining heritage language (HL) development has so far focused on contexts where English is the majority language (ML). These studies have shown that child heritage speakers tend to overproduce strong referential forms (pronominal/lexical) and preverbal subjects in contexts where reduced forms and postverbal subjects would be preferred. To determine the extent to which these patterns are the result of cross-linguistic influence, different language combinations need to be studied.

In the present study, we tested a group of Greek-Spanish bilingual children (N=29; Agemean=9;6) who speak Greek as an HL in South America (SA) (Chile; Argentina; Uruguay), and a group of Greek-English bilingual children (N=27; Agemean=10) who speak Greek as an HL in North America (NA) (US; Canada). The two groups differed in their amount of Greek exposure (SA<NA) but were matched on age and HL proficiency. They were administered a picture-naming task targeting vocabulary, and two sentence completion tasks, targeting the form and placement of referential expressions. In both structures, Greek patterns with Spanish (and differs from English) in favoring reduced referential forms (null subjects/object clitics) and postverbal subjects.

Regression analyses revealed facilitatory effects when Spanish was the ML, in all domains except the domain of null subjects, where the two groups performed similarly. On the vocabulary level, the closer phonological similarity of cognates between Greek and Spanish led to greater facilitation compared to Greek and English cognates. Accordingly, the greater typological proximity between Greek and Spanish led to a higher rate of object clitics and postverbal subjects in the SA group compared to that of the NA group. These findings can potentially help us disentangle effects of crosslinguistic influence from more general bilingualism effects. The results from the SA context also contribute to a broader discussion about how HLs may be viewed when linguistic similarity facilitates HL acquisition."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Developing an assessment of vocabulary proficiency for Irish-English bilingual children: Irish CLTs

Ciara O'Toole

Assessing vocabulary knowledge is an important part of establishing language proficiency in bilingual children. The crosslinguistic lexical tasks (CLTs) provide a framework for testing vocabulary development in three-to-six year-olds using a standard procedure and comparable items for multiple languages. This study describes the development of the Irish CLTs to test receptive and expressive vocabulary for nouns and verbs. The test was then used in a pilot study to measure the vocabulary development in both Irish and English of 41 bilingual children attending Irish-immersion education in an Irish-speaking region of Ireland. The results showed that, as expected, children found lexical comprehension to be easier than production, and nouns easier than verbs. As a group, those from Irish dominant homes performed similarly on both the Irish and English versions of the CLTs, but those from bilingual and English-dominant homes performed significantly better on the English version. The amount of home-language exposure to Irish and English showed advantages on production tasks in each language. However all groups performed relatively poorly on the production and comprehension of Irish verbs. We explore the findings in relation to the importance of language exposure in a minority language context.

Bi-/multilingual acquisition in typically developing children

07/16/2024

2L1 acquisition in typologically closely related languages: the case of heritage Afrikaans

Martine Coene; Andrea van Zyl

"Background and Main Aim.

Child heritage speakers of Afrikaans who are living in the Netherlands are raised by Afrikaans native-speaking parents, resulting in some degree of bilingualism in both Afrikaans and Dutch. Given that both languages are typologically closely related, they offer a unique opportunity to investigate to what extent very subtle differences between two languages that belong to the same language family give rise to grammatical transfer. We will focus both on 'simplification' and 'complexification' strategies looking at potential sources of incomplete or delayed acquisition of the Afrikaans heritage grammar based on structures that are absent in Dutch as compared to Afrikaans (e.g. double negation) but also at properties that are specific to Dutch and may lead to (non-native like) complexity in the grammar of Afrikaans (e.g. subject-verb agreement).

Method and Results.

Starting point for our assessment is the Afrikaans CHILDES database (Southwood, 2006) which provides normative data on the morpho-syntactic abilities of typically developing Afrikaans-speaking preschool children. We assess grammar comprehension and production of Afrikaans as a heritage language by means of an adapted version of the four-picture selection task and language sample elicitation task developed by Southwood (2005) to identify potential effects of grammatical transfer of the community language on the inflectional morphology and syntax of Afrikaans.

We present the outcomes of a small multi-case study with 2 heritage-speaking children of Afrikaans living in the Netherlands, 2 native-speaking children of Afrikaans living in South-Africa, and 2 native-speaking children of Dutch living in the Netherlands who are between 4 and 6 years old. A quantitative and qualitative analysis of the children's responses based on test items that have been selected to include minimal differences between Dutch and Afrikaans provide evidence in favour of fine-grained transfer between the dominant language (Dutch) and the heritage language (Afrikaans)."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Cross-linguistic influence in Cantonese-English bilingual children's production of null objects

Juliana Gerard; Chloe Chiu; Raffaella Folli; Christina Sevdali

"Cross-linguistic influence (CLI) can be accounted for by many different factors, including language dominance (Yip and Matthews, 2000) and structural overlap (Hulk and Müller, 2000). Previous research produced conflicting views on the extent to which each factor can predict influence (Van Dijk et al., 2022). The current study explores these two theories through an analysis of null object production in Cantonese-English bilingual children. Language dominance predicts uni-directional influence from the dominant language to the non-dominant language. In contrast, structural overlap predicts uni-directional influence from the language allowing just one analysis of a syntactic construction (overt objects in English) to the language allowing more than one analysis (null and overt objects in Cantonese). Longitudinal CHILDES data (Brown, 1973; Lee et al., 1996; Yip and Matthews, 2007) was analysed from nine Cantonese-English bilingual children (six Cantonese-dominant, one English-dominant, two balanced), two English monolingual children, and two Cantonese monolingual children. Language dominance for each child was determined by an MLU differential (Yip and Matthews, 2006). Utterances containing null objects were identified using Python followed by manual coding for obligatorily or optionally transitive verbs. Bilingual children produced consistently higher rates of object drop in English transitive verb utterances than their monolingual peers which was regardless of dominance and attributed to influence from Cantonese to English. Furthermore, the rate of object drop in Cantonese for transitive, ditransitive, and directional verb utterances was lower than monolingual peers which was attributed to influence from English to Cantonese. This suggests that the influence was bi-directional. These results are inconsistent with both the language dominance and structural overlap theory in the context of null objects as both theories predict uni-directional influence. Future research should further assess the CLI theories on different constructions and determine whether other theories can better account for all of the observed influence."

Bi-/multilingual acquisition in typically developing children

07/16/2024

Pro-drop acquisition in Russian and Hebrew in monolingual and bilingual children

Natalia Meir; Galina Gordishevsky

Pronoun choice is vulnerable in bilingual acquisition due to cross-linguistic influence or a higher threshold for ambiguity tolerance in bilinguals (Serratrice et al., 2004). We investigated overt-vs.-null pronoun use in two languages (Russian and Hebrew) which allow null pronouns, yet vary in their licensing. Hebrew licenses 1st and 2nd person pro-drop syntactically, 3rd person pro-drop is discourse-bound (Doron, 1999). Russian, on the other hand, is a discourse-drop language (Franks, 1995).
We recruited 66 children aged 4;2-8;0 and 40 adults: bilingual Russian-Hebrew speakers and monolingual child and adult controls in both languages. Pronoun elicitation tasks tested third-person subject and object pronouns using pictures (Subject prompt: The boy is wet because … Target: he/∅ jumped into the puddle; Object prompt: The baby is laughing because… Target: the father is tickling him/∅.)
First, our findings confirmed cross-linguistic differences between subject and object drop in adult controls. In the adult data, null subjects occurred in both languages, yet to a different extent (Russian: 97%; Hebrew: 18%); no null objects were observed. Second, Hebrew-speaking monolingual children exhibited adult-like use of subject and object pro-drop, whereas Russian-speaking monolinguals were more likely to resort to overt pronouns in the subject position compared to adults. Thirdly, for subject-drop, bilingual children paired up with Hebrew monolingual child controls, yet differed from Russian-speaking controls. For object drop, all groups converged. In bilingual children, age was related to subject drop: as children grow older, in Hebrew they start using more overt pronouns, yet in Russian, they start using more null pronouns.
In conclusion, despite the differences between the two languages, bilinguals acquire referential choice in a monolingual-like manner in both their languages. Yet, both monolingual and bilingual children might go

through a protracted path in null-vs-overt pronoun acquisition, as the data for Russian reveals (see also Iraola Azpiroz et al., 2017).

Bi-/multilingual acquisition in typically developing children

07/16/2024

Having, accessing, and uptaking syntactic representations: Priming as a learning index in children

Jiuzhou Hao; Patrick Sturt; Jason Rothman; Vicky Chondrogianni

"In child language development research, the syntactic priming paradigm has been used to assess abstract syntactic representations and the automaticity in accessing particular structures. In heritage language (HL) bilingualism, child heritage speakers (CHSs) are often shown to have different surface performance patterns in the HL relative to monolingual children. Priming constitutes a good candidate to inform whether such differences reflect representational and/or accessing differences.

Recent studies with neurotypical/typically-developing monolingual children (L1-TD) show that priming may increase as a function of more trials and/or maintain for a prolonged period of time, suggesting (cumulative) priming taps into implicit learning/uptaking of grammatical representations. Meanwhile, this cumulative effect is absent in children with Developmental Language Disorder (DLD), including L1-DLD. This particular application of priming, however, has been restricted to primarily monolingual and clinical populations with mixed results. As there is no reason to assume that neurotypical/typically-developing CHSs (CHS-TD) have reduced uptake abilities, in the present study, we adopt priming to assess implicit learning in CHS-TD, and to scrutinise its validity across diverse learner groups.

We tested Mandarin passives in 22 L1-DLD, 32 Mandarin-English CHS-TDs and 35 L1-TD (5-to-9-y.d.; age-, SES-, and non-verbal IQ-matched). Results show that, while immediate (after each trial) priming is observed in all groups, L1-DLD and CHS-TD have similar priming magnitude, yet smaller than L1-TD. For all groups, priming increases with age. However, for CHS-TD, age is no longer significant when current HL input quantity is considered. This suggests that while having the syntactic representation of Mandarin passives, L1-DLD and CHS-TD are less automatic in accessing it relative to L1-TD; their ability improves with age, and for CHS-TD with more HL input. Cumulative priming is observed in the two neurotypical groups (L1-TD, CHS-TD) to a similar degree but not in L1-DLD, supporting the validity of the task as a clinical marker."

Developmental language disorders (DLD), SLI

07/16/2024

Word learning in DLD: a meta-analysis testing the encoding hypothesis and the role of working memory

Paola Calabrese; Nicholas Hedger; Vesna Stojanovik; Katherine Pritchard; Emma Pagnamenta

"Background

Developmental Language Disorder (DLD) is associated with word learning difficulties. Recent evidence suggested that children with DLD struggle with the initial phase of encoding, while consolidation and retention of words is comparable to their Typically Developing (TD) peers. Encoding difficulties could result from lower verbal working memory or poor lexical knowledge. Both domains are necessary for word learning and should be explored together.

An existing meta-analysis on word learning in DLD (Kan &Winsor 2010) including 28 papers (DLD n = 574, TD n = 611) focused exclusively on encoding. The present work aims to expand previous findings by:

- Identifying which stage (encoding, consolidation, retention) may be most challenging for word learning in children with DLD.

- Understanding whether the difficulties are predicted by children's lexical knowledge and/or working memory.

Method

831 papers were retrieved via PsycINFO, MEDLINE/PubMed, Web of Science, Linguistics and Language Behaviour Abstracts. Forty-two group comparison (DLD vs TD) studies were included, the 122 effect sizes calculated were then analysed using random effect models. The overall sample sizes were DLD = 1049 and TD =1601.

Results

There was a significant effect size for encoding (k =73, d =0 .88, [0.69, 1.07], p <.001), but not for consolidation (k = 13, d = - 0.04, [- 0.34, 0.25], p = .77) nor for retention (k = 6, d = - 0.42, [- 0.95, 0.11], p = .12). Verbal Short-Term memory predicted encoding (k = 22, β = 2.57, p <.001) while receptive vocabulary did not (k = 50, β =0.25, p =.101).

Conclusions

The results confirmed that the encoding stage is crucial for the acquisition of new words in children with DLD. Verbal Short-Term memory was the main predictor of encoding, highlighting the contribution of this component of working memory to word learning in children with DLD."

Developmental language disorders (DLD), SLI

07/16/2024

Developmental language disorder is associated with deficits in emotion understanding and regulation

Elizabeth Che; Patricia Brooks; Rita Obeid; Danielle DeNigris; Nicole Zapparrata; Blair Weng; Katherine Chow; Nicole Damiani

According to constructivist theories of emotion (Chater, 2018; Feldman Barrett, 2017), acquiring language to talk about and interpret feelings underlies one's ability to recognize, understand, and regulate emotions. This pre-registered meta-analysis used robust variance estimation to examine effects of developmental language disorder (DLD) on children's emotion understanding and regulation. Based on a database search of EBSCO and PubMed, we selected studies comparing groups of children with DLD with age-matched neurotypical groups on measures of emotion recognition, understanding, or regulation. The meta-analytic sample comprised 21 studies (k) with 62 effects (m) involving 1082 children with DLD and 2377 age-matched children, M age = 8 years, 5 months (SD = 2 years, 9 months). The overall standardized mean difference (Hedges's g) was of large magnitude, g = −.84 (SE = .12), [[CI −1.09 :: −.58]], t(19.2) = −6.78, p <.001, indicating worse performance in DLD groups. Subgroup analyses indicated a medium effect for emotion recognition/understanding (k = 12, m = 36), g = −.58 (SE = .17), [[CI −.95 :: −.22]], t(10.2) = −3.54, p <.001, and a large effect for emotion regulation (k = 11, m = 26), g = −1.00 (SE = .12), [[CI −1.27 :: −.73]], t(9.8) = −8.18, p <.001. Effects did not vary significantly by mean age of DLD groups (mean-centered) or dependent variable type (emotion recognition/understanding vs. regulation). The overall estimate was comparable in magnitude to the large effect observed in a meta-analytic study of theory of mind difficulties associated with DLD (Nilsson & de Lopez, 2016). The findings support the view that children acquire foundational understanding of internal states through discourse (Nelson, 1998), with acquired concepts varying across individuals, languages, and cultures (Feldman Barrett et al., 2007). The findings confirm heightened risk of emotion-related difficulties in children with DLD, with implications for social development.

Developmental language disorders (DLD), SLI

07/16/2024

Oral language and emergent literacy skills in Saudi Arabic-speaking children with and without DLD

Zakiyah Alsiddiqi; Vesna Stojanovik; Emma Pagnamenta

Although children with developmental language disorder (DLD) are known to have difficulties with emergent literacy skills, none of the available Arabic studies have examined emergent literacy skills in children with DLD. It has been suggested that oral language skills contribute significantly to emergent literacy skills in English-speaking children, so this study aims to fill this gap in Arabic studies by being the first to examine the associations between different oral language and emergent literacy skills in Arabic-speaking children, with and without DLD, aged 4;0 to 6;11 (years; months). The study will also investigate the relationships between verbal short-term memory (VSTM) and emergent literacy skills, and their impact on Arabic children with and without DLD. The aim is to provide additional new insights into relationships between oral language, VSTM, and emergent literacy skills in the Arabic language, and contribute to the understanding of emergent literacy development in Saudi Arabic-speaking children. In terms of methodology, this study administered comprehensive Arabic language, VSTM and emergent literacy batteries to a typically developing (TD) group and DLD group of children based in Riyadh, Saudi Arabia. Consistent with existing literature, findings demonstrated that the TD group significantly outperformed the DLD group on emergent literacy measures. Findings also showed significant associations between oral language skills, VSTM, and emergent literacy skills in both TD and DLD groups; however, these associations were stronger in the DLD group than the TD group.

Results also revealed that vocabulary knowledge and digit recall were significant predictors for emergent literacy skills in the DLD group only. This study represents an important first step in understanding emergent literacy skills and their relationships to language in Arabic-speaking children with and without DLD.

Developmental language disorders (DLD), SLI

07/16/2024

Teachers' Diagnostic Practices in the Context of Language Development, Multilingualism, and Behavior

Anja Starke; Alexander Röhm; Ulrich Stitzinger; Katharina Rademacher; Michelle Grengel; Nur Seda Saban-Dülger

"In about 7% of all children, language disorders manifest themselves as developmental language disorders (DLD; Norbury et al., 2016). DLD can occur in both monolingual and multilingual children, although multilingualism is not a risk factor for DLD. Since about a quarter of children in Germany grow up multilingual, the differential diagnosis of DLD in multilingual as well as in monolingual children is of high importance. This is to avoid misdiagnosis in terms of unrecognized (missed identity) or overinterpreted (mistaken identity) need for support and therapy. However, misdiagnosis regarding DLD can also occur in the context of social-emotional behavior. While challenging behaviors are usually noticed by teachers, possible language impairments remain undetected in about 80% of these children (Hollo et al., 2014). There is a lack of scientific evidence to determine which aspects professionals consider in their assessment of educational needs and to what extent the combination of certain characteristics (DLD, multilingualism, behavior) influences their responses to these children.

A $3 \times 2 \times 2 \times 2$ online experiment with currently N = 516 participants (including student teachers as well as about 200 teachers in practice) was conducted to examine to which extent indications of DLD, multilingualism, social-emotionally challenging behavior, and the child's gender in fictional observation protocols of classroom situations influence respondents' spontaneous reactions toward the depicted children (e.g., attributed problems and causes, competence, sympathy) as well as diagnostic decisions (e.g., choice of an appropriate approach).

Data collection is currently ongoing. At the conference we will present results on the factors influencing teachers' diagnostic decisions and discuss our findings with regard to diagnostic competencies for identifying DLD."

Developmental language disorders (DLD), SLI

07/16/2024

Artificial word learning among Hebrew-speaking children with DLD

Sara Dvora Ferman; Osnat Segal

Purpose: This study aimed to characterize the learning process of artificial words among Hebrew-speaking children with Developmental Language Disorder (CDLD) compared to children with typical development (CTD). Method: Twenty-six Hebrew-speaking children, aged 5-8 years, including 13 CDLD and 13 CTD, participated in this study. All children learned eight artificial words that represented invented devices used in the kitchen and yard. The words were constructed from morpho-phonological patterns used for Hebrew devices. e.g., botfán is a device with which crumbs are collected. Each word was depicted by an appropriate picture. Practice took place over three learning sessions: the second session took place 24 hours after the first one, and the third session took place a week later. During each session, each artificial word was presented through a fast-mapping task, which required associating the artificial word with its meaning and its picture. Subsequently, these words were practiced through two tasks: phonological identification (phonological-picture association) and picture-naming (word production for a picture). Accuracy and response time (RT in milliseconds) were recorded. Results: A mixed two-way repeated measure ANOVA examined group and session effects; each task and each measure were analyzed separately. Significant session effects indicated improvement with practice, while group effects demonstrated better performance for CTD compared to CDLD in all tasks, for both accuracy and RT. Notably, interactions between group and session emerged in the phonological identification and naming tasks for accuracy, revealing slower progress among CDLD compared to CTD. Conclusions: This study suggests that Hebrew-speaking CDLD can learn different aspects of Hebrew artificial words. Although they exhibit potential for improvement through repeated practice, their slower learning suggests a possible need for additional practice to reach proficiency levels similar to those of CTD. These findings highlight the challenges of long-term memory in lexical acquisition for CDLD.

Developmental language disorders (DLD), SLI

07/16/2024

Deficits in semantic learning in school-age children with developmental language disorders

Alyson Abel

The school years are a critical time for vocabulary development. Children learn around 3,000 words per year, or ~8 per day, between 3rd and 9th grade. Vocabulary knowledge is heavily tied to academic and literacy outcomes. Despite this strong association between vocabulary and academic success, vocabulary is an underrecognized area of deficit in school-age children with developmental language disorders (DLD). Children with DLD have well-documented vocabulary deficits, particularly in the area of semantics and semantic learning, but the nature of these deficits remains elusive. Understanding why children with DLD fall short in semantic learning is prerequisite for targeted intervention with these children. A combined behavioral-electroencephalography (EEG) approach to the study of semantic learning allows for an examination of learning outcomes paired with inspection of the neural mechanisms engaged during semantic learning. Through this approach, we can identify differences in neural engagement during semantic learning in children with DLD. Seven children with DLD and 7 neurotypical age-matched (AM) peers completed a semantic learning task while EEG was collected. Groups were matched on age (M=9;4) and nonverbal cognition. The DLD group scored lower than the AM group on measures of general language ability, receptive vocabulary, expressive vocabulary, and phonological working memory. On the semantic learning task, the DLD group learned fewer words compared to their AM peers despite reporting equivalent amounts of confidence in their responses. EEG analyses revealed that, even when they provided the incorrect meaning, the DLD group had more effortful semantic processing compared to the AM group. However, looking specifically at responses for which children were highly confident in their accuracy, the DLD group showed less effortful semantic processing than the AM group. Together these outcomes suggest that children with DLD are generally working harder during semantic learning, but with poorer outcomes.

Developmental language disorders (DLD), SLI

07/16/2024

The phonological and grammatical development of Dutch children with DLD

Anouk Scheffer; Brigitta Keij; Britt Hakvoort; Esther Ottow-Henning; Ellen Gerrits; Frank Wijnen

"Background: Children with a developmental language disorder (DLD) often have both phonological and grammatical difficulties (Fey et al., 1994; Haskill & Tyler, 2007; Tyler et al., 2002). Despite this co-occurrence, it is unclear if and how the development of these domains is related. In this study, we examined the longitudinal relation between the phonological and grammatical development of young children with DLD.

Method: We have collected picture-naming task results and spontaneous speech samples of 37 Dutch children with DLD (mean age at T1 = 4;3, SD = 1;0, range: 2;8 – 6;0) on four measurement time points divided over nine months. Our four outcome measures are the percentage of consonants correct revised (PCC-R), a Dutch phonological complexity measure (FONO-P, Scheffer et al., in progress), the number of correctly produced utterances, and a Dutch grammatical complexity measure (TARSP-P, Bruinsma et al., 2020).

Results: Preliminary analyses on a subgroup of 27 children and two time points show significant correlations between the scores on all four outcome measures at T1 and T2. Between these time points, growth patterns were diverse. In the presentation, we will discuss the results of all 37 children at four measurement time points. We will examine whether the growth curves between the phonological and grammatical complexity and accuracy scores of the children are interrelated and if so, how they are related.

Conclusion: The first results suggest that children with DLD with higher scores on phonological measures are likely to have higher scores on grammatical measures, and vice versa. We will discuss how more insight into the relation between phonological and grammatical development contributes to a better understanding of the learning deficit of young children with DLD. Additionally, we will elaborate on the clinical implications of including both complexity and accuracy analyses when monitoring these children's development."

Developmental language disorders (DLD), SLI

07/16/2024

Sentence and non-word repetition tasks for the differential diagnosis between DLD and SSD

Leonor Piron; Sandrine Leroy; Christelle Maillart

"Background

Developmental language disorder (DLD) and speech sound disorders (SSD) are the most common pediatric disorders in the SLP field. Many children may also experience concomitant speech and language difficulties, leading to a dual diagnosis (SSD+DLD). Identifying SSD+DLD children among SSD and DLD children remains a challenging task. In this sense, recent studies have investigated the usefulness of sentence repetition and non-word repetition. Non-word repetition failed to distinguish between the three profiles. Sentence repetition showed promising results for the distinction between DLD and SSD children, but its interest for the dual profile has never been explored. Only one study compared the accuracy of these two tasks for the discrimination between SSD and DLD children (Aguado et al., 2018). To date, no study has compared the accuracy of the two tasks for the identification of SSD+DLD children, among SSD and DLD children. Our study aims at determining the utility of sentence repetition and non-word repetition tasks for the differential diagnosis between SSD, DLD and SSD+DLD in preschoolers.

Methods

152 monolingual French-speakers aged between 48 and 67 months, without intellectual disability, hearing loss or multilingualism were recruited. Children were assessed on their speech and language abilities to determine their profile: typically developing (n=81), SSD (n=29), DLD (n=22), or SSD+DLD (n=20). All children took a sentence repetition task and a non-word repetition task. Anovas for repeated measures and discriminant analyses will be conducted to determine the utility of the two tasks for the differential diagnosis.

Expected results

Non-word repetition is expected to be sensitive to pathology, but to fail to distinguish between the three profiles. Sentence repetition is expected to distinguish SSD from DLD, and SSD from SSD+DLD, but not DLD from SSD+DLD. We expect that SSD+DLD profiles score the lowest in both tasks, allowing their identification through a particularly severe profile."

Developmental language disorders (DLD), SLI

07/16/2024

Derivational morphology in Dutch-speaking adolescents with developmental language disorders

Annemiek Hammer; Anouk Harting; Audrey Franssen

"Background: The acquisition of morphology is a weakness in the language development of children with DLD. However, whereas ample evidence shows production difficulties of inflectional morphemes marking tense and agreement, limited attention has been given to derivational morphology. As knowledge of derivational morphology supports word learning in typically developing adolescents, this might be an interesting route for adolescents with DLD as well. This study was set out to investigate if adolescents with DLD are able to recognize derivationally complex words on a lexical decision task.

Method: A total number of 81 adolescents with DLD (mean age = 14, range 12 – 17 years) participated in a lexical decision task. Items included pseudowords, morphologically complex words and simple words. Items were matched on word ending, which was either a suffix in complex items (e.g. bedoeling - meaning) or syllable in simple items (e.g. koning - king). Pseudowords were derived from existing words by vowel and/or consonant change. For each category accuracy scores were calculated.

Results: Mean accuracy scores were significantly higher for complex items (M=86,1%, SD=17,7%) as compared to simple items (M=79,7%, SD=11,0%; t=6,490, p<.001) and pseudowords (M=77,4%, 17,7%; t=-3,363, p<.001). No significant difference emerged between pseudowords and simple items (t=-.857, p=.394). Follow up analysis revealed that the suffix -ing (from noun to verb) was more difficult as compared to -lijk and -ig (from noun/verb to adjective).

Conclusion: Our results indicate that adolescents with DLD are able to recognize morphologically complex words. In effect, derivational suffixes seem to aid lexical decision making as scores were highest on complex items. Implications of the results for intervention targeting vocabulary will be discussed."

Developmental language disorders (DLD), SLI

07/16/2024

Sustained competitor activation during production in Developmental Language Disorder

Zara Harmon; Kristi Hendrickson; Si On Yoon

"Children with Developmental Language Disorder (DLD) have difficulty with word recognition and production. In word recognition research, this has been attributed to difficulty with lexical inhibition. More specifically, patterns of eye movement in the Visual World Paradigm studies demonstrate a more sustained activation of competitors in children with DLD compared to typically developing children. What is unclear is whether difficulties in lexical inhibition also underlie deficits in word production, and whether such deficits persist into adulthood.

We examined competition between target and competitor nouns immediately before and during word production in a combined eye-tracking and object naming task in adults with and without a diagnosis of DLD as children. We used two contexts in which sustained activation of a competing noun would affect naming a target: in experiment 1, subjects named a target in the presence of a semantically related competitor (e.g., target: milk, competitor: yogurt); in experiment 2, subjects named a target in the presence of a competitor from the same category (e.g., target: dotted shirt, competitor: striped shirt). On each trial, four pictures were presented to participants: target, competitor, and two unrelated nouns. Both experiments had a control condition in which the competitor was replaced by an unrelated picture (competitor-present vs. competitor-absent conditions). Eye movements were monitored and used as a measure of activation of target and competitor nouns.

We found that in both experiments and for both groups, the competitor is activated more strongly and for a longer period of time in the competitor-present condition compared to the control condition. Crucially, this effect was stronger for the group with a diagnosis of DLD in childhood compared to the typically developing group. We also examined the effect of this sustained activation on naming latencies. We discuss the results in the context of theories of word learning in DLD."

Developmental language disorders (DLD), SLI

07/16/2024

CONCURRENT VALIDITY OF A SHORT QUESTIONNAIRE AND A SCREENING TEST FOR EARLY DETECTION OF DLD

ALEJANDRA AUZA; Chiharu Murata; Christian Peñaloza

"Background. The underdiagnosis of Developmental Language Disorder (DLD) in children is a significant problem in developing countries with limited resources, such as monolingual Latin American Spanish-speaking children. This study aimed to quantify the sequential utility of two screening tools, the ""Parental Questionnaire (PQ)"" and the ""Screening for Language Problems (TPL)"", to identify children who require confirmatory diagnosis of DLD.

Methods: A total of 282 parents of children (4 to 6 years) were contacted in private and public schools and health centers. Monolingual Spanish-speaking children with no auditory and cognitive disorders were eligible. The PQ was developed to collect information on the child's developmental history, characteristics of the family environment and the level of parental concern regarding their child's language. This section had eight ""Yes"" or ""No"" questions, based in Restrepo's questionnaire (Restrepo, 1998). The reference diagnosis of DLD was established using BESA (Bilingual English-Spanish Assessment) or SCELF-4 (Spanish Clinical Evaluation of Language Fundamentals), combined with data from narrative samples that yielded the percentage of ungrammaticality and the clinical judgment of two Speech-Language Pathologists (SLPs). Responses to the PQ were obtained first, and then the TPL was administered.

Analysis: The diagnostic performance of PQ was evaluated using a four-level Stratum Specific Likelihood Ratio (SSLR), while the positive and negative Likelihood Ratios (LR+, LR-) was used for evaluating the performance of TPL.

Results. Both the PQ and the TPL were shown to be useful as screening tests for the identification of DLD in all age-groups. It was also found that using both tests in combination, notably increased their performance, and a significant improvement in diagnostic utility was shown.

Conclusion. The combination of these two procedures provides an efficient method for screening children having a high of risk of DLD and contributes to resolving the problem of under-identification."

Developmental language disorders (DLD), SLI

07/16/2024

Title: The Impact of Verb Difficulty on the Accuracy of Verb Usage by Children with DLD

Miriam Kornelis; Elizabeth Ancel; Kirstin Kuchler; Lizbeth Finestack

"Research indicates that variation in input is an important component of grammatical language treatment for children with Developmental Language Disorder (DLD). For example, Plante et al. (2014) found that modeling morphosyntactic target forms across 24 unique verbs led to greater acquisition than when target forms were modeled across 12 unique verbs . Owen Van Horne et al. (2018) suggested that verb features used to model target forms impact acquisition; however, this research was only based on the English past tense -ed form. Thus, we will examine the impact of verb features on the within-session accuracy of unique verbs by children with DLD in the context of explicit intervention across four grammatical forms.

Twenty 4-9 year-old children with DLD received 32 explicit intervention sessions targeting four grammatical forms. Each session was designed to elicit 24 unique verbs that varied in difficulty based on the frequency of use and phonological complexity (Finestack et al., in press). To account for the nested structure of the intervention with different sets of items included in the 32 sessions across all children, mixed-effects logistic regression will be used to predict the probability that a target verb form will be produced accurately. Critically, the analysis will consider item-level predictors: verb phonological complexity and frequency of verb use.

Analysis of the variance at each of the three levels will demonstrate whether the inclusion of item-level predictors is important for predicting the probability of an accurate response. Subsequent investigation into the individual item-level predictors, and verb phonological complexity and frequency will show the relative contribution of each of these characteristics and their effect on child accuracy.

Determining predictors of production accuracy of grammatical verb forms by children with DLD will inform future intervention approaches and research designs, particularly in regard to the selection of verb elicitation targets."

Developmental language disorders (DLD), SLI

07/16/2024

Spoken verb learning in children with a developmental language disorder in elementary school

Cheyenne Svaldi; Saskia Kohnen; Serje Robidoux; Kim Vos; Aliene Reinders; Roel Jonkers; Vânia de Aguiar

Introduction: Children with developmental language disorder (DLD) often present with spoken verb learning problems, but these deficits have scarcely been examined in elementary school children. This study aimed to replicate verb learning deficits reported in younger children with DLD. Further, since previous work has shown that children with DLD have more difficulty naming instrumental verbs, we investigated the influence of this semantic factor on verb learning. A possible orthographic facilitation effect, which has been well-established during noun learning, was also investigated. The study aimed to increase our understanding of mechanisms underlying verb learning problems as well as possible factors that might facilitate learning. Methods: Children with DLD and age-matched typically developing controls (n = 25 per group) between eight and 13 years of age (M = 9;9, SD = 1;3) were assessed for general language skills and verb learning abilities. Children learned 20 nonwords paired with video animations depicting existing actions. Ten items were instrumental and ten non-instrumental. Half of the verbs were trained with orthographic information present. Verb learning was assessed using an animation-word matching and animation naming task. The items were divided in two blocks, administered in separate test sessions. Results: Linear mixed-effects models showed a main effect of group for all verb learning measures. No effect of verb instrumentality or orthographic information was found. Discussion/Conclusion: Our results demonstrated that children with DLD learned fewer words and at a slower rate than their controls. However, instrumentality did not mediate this effect, nor did orthographic facilitation. While our findings are inconsistent with the overall literature on orthographic facilitation, they emphasize the importance of continued vocabulary instruction in elementary school, including for verbs. We will discuss possible reasons for our results and comment on the novelty of the design.

Developmental language disorders (DLD), SLI

07/16/2024

Bridging the gap between language and behavioural difficulties in adolescents at risk of exclusion

Laura Chambers

"The Bridge Project is a novel, narrative discourse and emotional literacy intervention for adolescents with co-occurring language and behavioural difficulties who are at high risk of exclusion (temporary or permanent removal from school). Young people who experience disciplinary exclusions are highly likely to have spoken language and social communication needs which include difficulties producing coherent narratives and identifying and describing complex emotions. This may contribute to emotional and behavioural problems and

present barriers to engaging with talking therapies and restorative practices implemented by schools. Despite this, very few studies have explored the feasibility or impact of language intervention on young people at risk of exclusion.

A pilot study conducted across three schools found that 31/41 students aged 11-15 identified by their school as being at high risk of exclusion had significant receptive and expressive language difficulties. Analysis of discourse features revealed that students' narratives included few evaluative comments such as causal explanations or insights into protagonists' motivations, or mental and cognitive states. Students also frequently omitted important macrostructural elements such as resolutions and internal responses.

Despite implementation challenges arising from temporary exclusions and student absence, preliminary effectiveness data indicates that following 10 weeks of intervention, students produced longer and more coherent narratives. The number and proportion of evaluative comments increased with more references to affective and cognitive states. The overall structure of students' narratives improved, in addition to small increases in morphological and syntactic complexity. Further improvements were observed in standardised expressive sentence and receptive discourse measures.

Despite the well documented co-occurrence of language and behavioural difficulties there is a current gap in the literature concerning evidence-based interventions which address these needs, particularly for older children. This study is an important step towards identifying effective approaches to support the functional language skills of adolescents who are at risk of exclusion."

Developmental language disorders (DLD), SLI

07/16/2024

Error analysis of sentence imitation in Czech children with developmental language disorder

Klara Matiasovitsova; Filip Smolík

"Sentence imitation (SI) is a sensitive marker of developmental language disorder (DLD). It can also indicate the difficulty of syntactic structures, as children should not be able to imitate structures they have not yet mastered. Considering the challenges that children with DLD face with relative clauses (RCs), the present study examines the types of errors they make compared to typically developing (TD) children when imitating RCs and simple adjectival phrases, which share some inflectional characteristics in Czech, and compares them to the errors made in another production task.

Sixty-three monolingual Czech speaking children with DLD (6;5-9;6, M = 8;10) were gender- and vocabulary-matched with TD children (3;7-6;7, M = 6;1). They completed sentence imitation and elicited production tasks involving 16 right-branching (and SI also 16 centre-embedded) RCs and 16 simple sentences with adjectival nominal phrases.

Qualitative analysis revealed that both groups used RCs modifying an isolated noun phrase instead of target RCs in sentence imitation and simple sentences as well as omissions of the wh-words and adjectives in both SI and elicited production. Conversely, children with DLD exhibited a higher tendency to omit verbs within the sentence core in elicited production (38 % in comparison to 26 % in TD children). Moreover, they more frequently replaced inflected wh-words with non-inflected alternatives in SI compared to TD children (214 cases vs. 91 cases, respectively).

Children with DLD and TD children used similar error patterns and avoidance strategies, although some of them were more common in DLD children. Omissions of grammatical wh-words and adjectives and the use of uninflected forms instead of inflected wh-words (more prevalent in DLD children) suggest challenges with words with adjectival declension. Syntactic difficulties with relative pronouns were indicated by verb omissions in the sentence core and the use of simpler sentences and types of relative clauses."

Developmental language disorders (DLD), SLI

07/16/2024

Word recognition in toddlers is modulated by preceding gestures

Lena Heine; Nicole Altvater-Mackensen

"A growing body of evidence points to the facilitating role of gestures in language learning (Rohlfing, 2019). Yet, studies rarely investigate how gestures influence children's processing. To address this question, we assessed if sign information facilitates word recognition in a priming task in hearing toddlers exposed to sign-

augmented communication (Wilken, 2021). We hypothesized that – if children integrate signs and spoken language in speech processing – children will show facilitated target recognition when being primed by a related compared to an unrelated sign.

40 German-learning children without hearing impairment (mean age = 4.5 years; range = 32-82 months) participated in a modified version of the visual priming task (Mani & Plunkett, 2010) that presented videos of a signer (prime) followed by two side-by-side images of yoked targets and distractors. While we did not find any effect of priming in an omnibus analysis, post hoc analysis revealed a significant interaction between prime condition and cohort size (F(1,37) = 46.010; p < .001). Children looked significantly longer at the target in unrelated compared to related trials (t(37) = -4.223; p < .001) when the item was from a large cohort, indicating an interference effect. In contrast, children looked significantly longer at the target in related compared to unrelated trials when the item was from a small cohort (t(37) = 5.639; p < .001), indicating a facilitation effect.

The results demonstrate a similar influence of cohort size on word recognition as observed in object-to-word priming in toddlers (Mani & Plunkett, 2011). This suggests that signs activate the corresponding spoken word representation in similar ways as implicitly generated spoken labels. This supports the idea that speech-accompanying gestures facilitate processing (Yap et al., 2011), and corroborate previous work showing cross-modal co-activation of signed and spoken/written language in bimodal adults (Shook & Marian, 2012)."

Early language comprehension in infants and toddlers

07/16/2024

Early Subject-Verb Agreement Acquisition in German Infants: An Eye-Tracking Study

Alejandra Keidel Fernandez; Anna Gavarró Algueró

This research investigates how infants acquire subject-verb agreement in German, a language known for its complex morphology. Previous studies (Johnson et al., 2005; Pérez-Leroux, 2005) highlighted challenges in this area, promoting further exploration into potential causes, such as experimental factors (Brandt-Kobele & Höhle, 2010; Gonzalez-Gomez et al., 2016) and cross-linguistic differences (Legendre et al., 2015). Our study involved sentences with full DP and pronominal subjects, which introduced ambiguity through the use of pronoun sie 'she'/'they'. We measured infants' gaze duration while they listened to these sentences and observed target and distractor visual stimuli. We hypothesized that infants skilled in subject-verb agreement parsing would exhibit longer gaze durations to target events. Nineteen 19.3-month-old children from Potsdam participated. Gaze duration changes across temporal windows, including a baseline and three exposures to target sentences (S1, S2, S3), were analyzed. In the Full-DP singular condition, gaze duration significantly increased across all windows after the baseline: S1 (t=2.42, p=0.0263), S2 (t=2.71, p=0.0143), and S3 (t=5.35, p<0.0001). Similarly, the plural scenes showed significant increases in S1 (t=-1.75, p=0.0966), S2 (t=2.35, p=0.0302), and S3 (t=4.93, p=0.0001). Regarding Pronoun singular scenes, significance emerged in S1 (t=3.31, p=0.0039) and S2 (t=2.88, p<0.0001), while Pronoun plural scenes displayed significance in S3 (t=2.68, p=0.0046). In the Pronoun plural condition, the Generalized Linear Model analysis indicated a confidence interval of 50%, suggesting random-looking behaviour. In contrast, other conditions and scenes had confidence intervals exceeding 50%, indicating a preference for target scenes. No significant differences between plural and singular subjects within the same conditions were found. These results confirm that infants as young as 19.3 months can effectively parse subject-verb agreement in German, marking an earlier milestone compared to previous research (Brandt- Kobele & Höhle, 2010) and aligning with contemporary studies on infants' syntactic competence across various linguistic domains.

Early language comprehension in infants and toddlers

07/16/2024

The role of early cognition / language development on language ability at 3;6

Susanna Surakka; Suvi Vehkavuori; Katri Saaristo-Helin; Petriina Munck; Suvi Stolt

"Background and aims: Multiple factors influence language development in childhood. However, the role of cognitive skills in this development remains unclear. Some theories underline the role of cognition in language development, whereas other theories suggest that language acquisition is based on language-specific processes. This longitudinal study analyzes how early cognitive/language development contributes to language ability at 3;6 (year;month).

Methods: The participants were 68 typically developing children (30 boys). Families were invited to participate when children were eight months old. The cognitive and language development of the children were assessed at

2;0 using the following methods: Bayley Scales of Infant Development III (cognitive scale) and Reynell Developmental Language Scales III (total score, RDLS-III). At 3;6 children's language skills were assessed again using the RDLS-III.

Results: Significant associations between cognition at 2;0 and language ability at 3;6 (r = .34, p < .00), and between early and later language ability (r = .70, p < .00) were found. The regression model using early cognition as a predictor, and gender and maternal education as background factors, explained 14% (p < .01) of the variation in later language ability. The model with language ability at 2;0, together with background factors, explained 48% of the variation in later language ability (p < .00). When language and cognitive ability at 2;0 were included in the model at the same time, the explaining value was 48% (p < .00).

Conclusion: Although early cognitive development was associated significantly with later language ability, its role was minor when compared to the role of early language ability. Still, both early cognitive and language development explained significantly later language ability. Findings contribute to our understanding of the matters influencing language acquisition during the early years of life and emphasize especially the role of early language skills in shaping later language development."

Early speech perception and production: infants and toddlers

07/16/2024

Processing of prosodic boundaries by six-month-old Dutch-learning infants

Rachida Ganga; Frank Wijnen; Aoju Chen

"Introduction: Speakers of many languages use intonational phrase (IP)-boundaries, marked by pitch change and lengthening of the IP-final syllable, and pause, to structure fluent speech. Behavioral research shows that, to respond to IP-boundaries, young infants need all cues, but fewer at an older age. Six-month-old English-learning infants need pitch rise with another cue, and German-acquiring infants no longer need pauses at eight months. Neurophysiologically, the latter group actually does so already at six months.

Infants' sensitivity to specific cues depends on their relative importance in the native language. Speakers rely mostly on pitch rise in English and on lengthening in German. Dutch and German speakers produce IP-boundaries similarly, although Dutch mothers tend to mostly use pauses. Which cue do Dutch-learning infants mostly use?

We addressed the following questions using EEG: 1) Do six-month-old Dutch-learning infants process IP-boundaries without a pause, shown as the ERP component Closure Positive Shift, and 2) is this response larger to fully-cued boundaries?

Methods: Thirteen six-month-old Dutch-learning infants listened to Dutch sequences of three names connected by 'and'. Stimuli were manipulated to create versions (without a boundary, a boundary cued by pitch rise and lengthening, and a fully marked boundary) after the second name. ERPs were computed from boundary onset in four regions (left and right frontal and posterior, LF; RF; LP; RP respectively).

Results: Preliminary mixed-effects analysis revealed that the two-cue boundary elicited positivities in LP and RP (p=0.012, p=0.006). The addition of a pause resulted in a negativity in RP compared to the two-cue boundary (p=0.011). Exploratory follow-up analysis showed that this negativity may overlap with no-boundary baseline (p=0.832).

Conclusion: Six-month-old Dutch-learning infants seem to process IP-boundaries in the absence of pauses. The addition of pause did not result in a larger response. Instead, the response seemingly went back to baseline."

Early speech perception and production: infants and toddlers

07/16/2024

Initial stress in French Children

Guillaume ROUX; Germana SOLER MILLAN

"French has a final lengthening primary accent (FA) carried on the last syllable of a rhythmic group. It is the delimiting marker of the accentual phrase (ap); ap is also the level of the secondary accent (IA), as an initial stress. Its function and phonological status are still debated today. In children, FA appears around the sixteenth month in productions that are mainly dissyllabic, constituting iambs with metrical right prominence. However, what can we say about IA?

11 children (CHILDES database) were compared according to the Mean Length of Utterances (MLU). The research focused on combinations of lexical units. With CLAN software, Cooccur commands showed that the most frequent were: adjective-noun; noun-adjective; verb-verb; verb-adjective. 100 productions were extracted at random on the Praat software, 25 per category. A perception test was developed, asking for a judgment between 1 and 5 of the perceptual salience of the syllables from 10 native speakers. Then the two authors manually analyzed the F0 curves of each utterance.

A total of 1688 utterrances were analyzed. They show that the adjective-noun category is the most frequent (n=765), followed by noun-adjective (n=552). The perception test showed that significant non-final prominence is identified mainly on noun-adjective (79% of productions; p<.01). On Praat software, a majority of units (77%) show a pitch stress.

These noun-adjective productions appear variably when children have a minimum MLU of 1.8; they increase between 2.5 and 3.5. The gap narrows with an MLU greater than 5. Thus, IA seems to appear with postposed adjective and an increased number of syllables. Since the development of nouns has always been linked to the FA, when it is in an ap where it does not carry the FA, IA tends to appear on nouns to indicate its importance as the most important element of the syntagm."

Early speech perception and production: infants and toddlers

07/16/2024

The Linguistic Input of 6- to 13-Month-Old Iranian, Persian-Learning Infants

Sara Montazeri; Melanie Soderstrom

"The characteristics of linguistic input, including the quantity and quality of speech to which infants are exposed, play a vital role in their language development. To date, studies have primarily examined caregiver's speech to infants in Western cultures; therefore, relatively little is known about linguistic input in Middle Eastern contexts. Our study addresses this gap by examining caregiver speech to Persian (Farsi) infants in Mashhad, Iran. We collected data using the LENA system, designed for audio recording and automatically analyzing infants' everyday language experiences. We created a dataset that includes naturalistic home audio recordings from the language environment of n=50 (mean age: 0;9.22, age range: 0;6.0 to 0;13.19) Persian infants, as well as annotations of these recordings.

In a first analysis, we explored the relationship between Persian infants' age and gender, and the total amount of speech from adults (Adult Word Count: AWC) they received. A linear regression indicated no significant relationship between infant age and AWC (p = 0.151) or between infant gender and AWC (p = 0.747). Moreover, results of a paired-samples t-test revealed that Persian infants hear significantly more speech from female (mean: 84.82) than male (mean: 17.98) adult speakers (p < .001), which is consistent with previous research regarding the important role of female caregivers in infants' language development.

In ongoing work, we are examining specific prosodic characteristics of Persian infant-directed speech via annotation and acoustic analysis. Our study enhances the inclusivity of psychological research by diversifying samples in the domain of infant language development, highlighting the unique linguistic environment experienced by Persian infants in Iran during their early stages of language development."

Effects of language input and environment

07/16/2024

Characterizing Infant-Directed Communication and Links to Caregiver-Infant Synchrony

Jessica Kosie; Casey Lew-Williams

"Everyday caregiver-infant interactions are dynamic and multidimensional. However, existing research underestimates the true dimensionality of infants' experiences, often focusing on one or two communicative signals (e.g., speech alone, or speech and gesture together). Our goal is to augment this research by investigating "infant-directed communication" (IDC): the suite of communicative signals from caregivers to infants including speech, action, gesture, emotion, and touch.

A total of 144 predominantly white, middle-class caregivers in the US and their 18- to 40-month-old toddlers participated in our studies. In Study 1 (N = 44), caregivers and infants were recorded at home (via Zoom) during a single free-play interaction. In Study 2 (N = 40), we collected six total at-home caregiver-infant interactions, during playtime, mealtime, and book sharing on two different days. In Study 3 (N = 60), caregivers and infants

engaged in natural play in the lab while we simultaneously measured neural activity (using fNIRS) in both members of the dyad.

We found that multiple, overlapping dimensions of infant-directed communication occurred throughout all interactions and that the number of overlapping multimodal cues increased in response to infant vocalizations (p < .02) and gestures (p < .001). Additionally, while individual caregivers tended to use communicative cues in similar ways within an activity context, their use of cues varied across both activity contexts and caregivers (ps < .001). This perhaps reflects caregivers' adaptation of cues to their own infants' needs in each unique context. Preliminary findings on relations between IDC and brain-to-brain synchrony suggest that the stability and predictability of caregivers' communication may be linked to stronger neural synchrony with their infant. Our results demonstrate that everyday caregiver-infant communication is highly multidimensional and highlight the importance of understanding this multidimensionality for both theory-building as well as for understanding the real nature of individual differences across infants' communicative environments."

Effects of language input and environment

07/16/2024

Modelling individual differences: English /l/ of English-Malay bilinguals in multi-accent Singapore

Jasper Sim; Brechtje Post

"Many children are raised in multi-accent environments, and variable input can cause delayed category formation and unstable phonemic categories in perception and production. A related question is whether such variability can be better characterised by acquisition that is guided by whole-word exemplars or phonological rules/constraints. This present study investigates lexical variation and individual differences in the spontaneous production of English coda /l/ by English-Malay bilingual preschoolers raised in multi-accent/-cultural Singapore. Malay caregivers use predominantly coda clear-[l] in English and Malay, but their English coda laterals can also be l-less (vocalised/deleted) and in formal contexts, velarised. Contrastingly, the English coda laterals of the Chinese majority are typically l-less. In a previous study involving controlled speech, all Malay child participants variably produced English coda clear-[l], but the coda laterals of those with Chinese close peers were more likely to be l-less than those without.

In this study, we analysed the English coda laterals in the spontaneous mother-directed speech of 19 English-Malay early bilingual children aged between 2;3–6;1 (M=4;5, females=8), who used Malay to different extents (%Malay_use=6–51%). Coda laterals were impressionistically and acoustically analysed and labelled as clear-[l] (n=322) or not (n=316; mostly l-less) and were further categorised according to whether the laterals were prepausal or preconsonantal. The findings revealed that although there is considerable between-child variation (%clear-[l]=0–94%), production patterns are generally predictable: (i) children were either categorically clear or l-less, regardless of phonological contexts, (ii) or that their preconsonantal /l/ was typically l-less. (iii) Younger children who produced clear-[l] did so only for prepausal laterals. Children who had Chinese close peers, however, were highly variable in their production and the same lexical items may be variably clear/l-less; their production cannot be straightforwardly explained by rules/constraints nor exemplars. We discuss implications for researching/modelling child phonological acquisition in similarly diverse contexts."

Effects of language input and environment

07/16/2024

How do naming moments emerge in natural infant-parent interactions?

Sara Benham; Hadar Karmazyn-Raz; Linda Smith

Poverty of the stimulus is a problem solved by 12-month-old infants learning their first object names. While objects are pervasive in infants' natural daily visual experiences, the labeling of an object referent by parents is relatively sparse. Eventually, infants must map a phonological form to a referent to learn an object's name. In this work, we examine how the infant's own phonological system reinforces their readiness to map a referent to an object. We hypothesize that it is not only the pervasiveness of visual objects and object handling engagements with a caregiver which provide the rich context for learning object labels, but it is these factors combined with an infant's own vocalizations which allow infants to build referent-object mappings in the context of sparse naming events. Here we investigate the emergence of naming moments during natural infant-parent engagements with objects over an extended period of time. Infants and their parents (n=35) play with the same set of 30 toys at home for 10 minutes a day for 4 days within a week. The infants' ages ranged from 11-22 months and the play was recorded from their egocentric view while wearing a head-mounted camera. We parse the raw videos into 5-second segments and code each segment for infant and parent object handling, parent

object naming, and infant vocalizations. The infant-parent dyadic streams of moment by-moment engagements were analyzed using cross-recurrence networks. Preliminary results show that naming moments emerge surrounding infant's vocalizations with objects and follow infants' repeated and rich experiences of object handling. These results suggest that naming moments don't emerge in a vacuum; they build upon infant-directed moments that allow the infant to link an object referent's name. This aligns with new evidence of rapid cortical formation of permanent memories in active, social, multimodal extended-in-time episodes of experience.

Effects of language input and environment

07/16/2024

Mother-child reminiscing during the COVID-19 pandemic and children's behavioral problems

Lisa Schröder; Pirko Tõugu; Tiia Tulviste

"Parent-child past-event conversations about challenging life events play an important role for children's coping with emotional and even traumatic experiences (e.g., Fivush et al., 2003; Sales et al., 2005). The COVID-19 pandemic induced life changes and restrictions that happened on a societal level and even worldwide. It thus was a very specific kind of threat not experienced by families before. In the present study we investigate how parents reminisced with their children during the pandemic in 2020 and how the maternal reminiscing style is related to different child and maternal emotionally related variables concurrently (2020) and three years later (2023).

Middle-class mothers from Germany (GER), n=26 and Estonia (EST), n=23 reminisced with their 3- to 4-year old children (MGER=48.15 months, SD=6.14, 65% girls; MEST=49.13 months, SD=5.71, 56% girls) about two past events in summer 2020. Mothers also filled in questionnaires assessing maternal depressiveness (CESD-R-10, Andresen et al., 1994) and children's behavioral problems (SDQ, Goodman, 1997). Latter questionnaire was assessed a 2nd time 3 years later.

Mothers of both contexts were highly elaborative on average (MGER=27.57, SD=15.64; MEST=24.26, SD=16.05) and children actively contributed memory information to the conversations (MGER= 9.67, SD=4.99; MEST=9.60, SD=7.00). Surprisingly, most dyads in both contexts (GER: 85%, EST: 74%) did not refer to emotions at all, but did include evaluative talk (GER: 85%, EST: 78%). The majority of mothers in both contexts referred to the pandemic in at least one of the two conversations (GER: 69%, EST: 78%). In 2020, 35% of the German and 24% of the Estonian children had behavioral problems, reducing to 7% (GER) and 12% (EST) in 2023. Culture specific relations between reminiscing style and children's and mother's well-being will be analyzed and presented. Finally, the meaning of past-event conversations for children's coping with challenging live situations will be discussed."

Effects of language input and environment

07/16/2024

Parental emotional availability and infant positive emotionality predict communicative development

Denise Ollas-Skogster; Pirkko Rautakoski; Riikka Korja; Hetti Lahtela; David Bridgett; Akie Yada; Hasse Karlsson; Linnea Karlsson; Saara Nolvi

"Parent-child interaction and child temperament are known independent predictors of language development. However, although it is theorized that temperament traits influence language development through its implications for interaction with communication partners, few studies have investigated the roles of parent-child interaction and communicative development together to explore moderation effects, and even fewer have included preverbal gesturing, although it is a significant precursor to verbal language. Furthermore, the scope of parent-child interaction has been rather narrow.

The aim of the study was to investigate the roles of mother-infant interaction and infant temperament as predictors of infant communicative skills and toddler expressive vocabulary and explore whether temperament affects are moderated by interaction.

Parent-infant interaction was assessed using the Emotional Availability Scales (EAS), involving parent subscales sensitivity, structuring, non-intrusiveness and non-hostility, at infant age 8 months. Temperament was assessed by parent report (Infant Behavior Questionnaire – Revised, IBQ-R) at 6 and 12 months of age and observationally (Laboratory Temperament Assessment Battery, Lab-TAB) at 8 months. Communicative development was assessed by the MacArthur-Bates Communication Development Inventories (CDI) infant

version at 14 months and toddler version at 30 months. Structural equation modeling (SEM) was used to create a path model depicting the relations between emotional availability, temperament traits and communicative skills.

The SEM-model presenting adequate fit included significant paths between a latent variable of emotional availability and a communicative skills-latent variable at 14 months. Emotional availability did not relate directly to 30-month vocabulary, but the path between 14-month communication and 30-month vocabulary was significant. Infant positive emotionality assessed by parent report was the only temperament trait to predict 14-month communicative skills. No significant moderation effects were found in the explorative analyses.

To conclude, results indicate that parental emotional availability positively predicts communicative development in infants. Emotional availability and temperament seem to have independent effects on communicative development."

Effects of language input and environment

07/16/2024

Evaluating an App with Voice-Recognition Technology to Promote Parent-Child Talk During Reading

Kathryn Leech; Grace Lin; Dorentina Dedushaj; Meredith Thompson; John Gabrieli

"This study examined whether a smart-speaker app could promote conversation and engagement between parents and children while reading print books together. We designed the app to encourage abstract, decontextualized conversation that extends beyond the book (i.e., past and future references, explanations, questions). Prior to reading, the app's virtual character introduced parents to examples of decontextualized conversation using the acronym "R.E.A.D.Y. Talk". During reading, the app's virtual character used AI voice-recognition technology to prompt dyads to engage in decontextualized conversation 6-7 times. Using a randomized-control design, we investigated whether decontextualized talk and children's verbal engagement increase while reading with the app, and whether increases transfer to reading without the app.

Forty lower- to mid-income parents and their children from the U.S. participated. Dyads were assigned to an app-group, which received the app at Session 1, or to a waitlist control-group, which received the app at Session 2. During Session 1, all dyads read without the app. Immediately after, the app-group was introduced to and read with the app. During the next month, dyads read daily with (app-group) or without (waitlist-group) the app. At Session 2, all dyads read without and then with the app. We transcribed and analyzed recordings for parent decontextualized talk and child verbal engagement (i.e., composite of word types, tokens, and MLU).

Reading with the app significantly increased parents' decontextualized talk from 25.0% to 41.8% of total (non-text) utterances, p<.001, and children's verbal engagement by 0.47 SD, p=.01. When reading without the app at Session 2, no group difference in decontextualized talk was observed, p=.99. However, within the app-group, greater app usage (p=.002) and more decontextualized talk at home (p=.004) predicted gains in decontextualized talk at Session 2. This study provides evidence of how smart-speakers can enhance interactions around print books in ways known to benefit early literacy."

Effects of language input and environment

07/16/2024

Child's gender moderates the relationship between booksharing and early vocabulary development

Ana Carmiol; Susan Castro; María Castro-Rojas; Adriana Weisleder; Juan Robalino

"Early vocabulary development is crucial for future cognitive and academic outcomes, and parent-child booksharing has been recognized as a powerful home literacy practice to promote word learning. However, recent meta-analytic findings suggest a more modest effect for book reading interventions on language than previously observed, especially for children from low-income backgrounds. Moreover, evidence about the link between booksharing and language development in diverse cultural and socioeconomic settings is currently limited.

This study explores the relationship between booksharing and early receptive and expressive vocabulary in Costa Rica, where children are less frequently exposed to literacy experiences than in developed countries, and caregivers' book reading conversational strategies differ from the interactive style commonly observed in Anglo, middle-class populations. We also investigate whether child's gender moderates this relationship, as previous evidence suggests reading is perceived as a feminine domain in various Latin American contexts (Espinoza & Strasser, 2020).

Our sample comprised 183 monolingual, Spanish-speaking Costa Rican children (Mage = 15.80 months, SD = 0.87 months, Range = 15 – 17.97 months, 82 girls) and their mothers. Mothers provided sociodemographic information and reported their home reading behaviors on the Spanish version of the READ scale from the StimQ2 Cognitive Home Environment Questionnaire (Cates et al., 2023). Children's receptive and expressive vocabularies were assessed using the Short-form version of the Spanish MacArthur–Bates Communicative Development Inventory (Jackson-Maldonado et al., 2013).

Multiple regression analyses indicated that infants' receptive and expressive vocabularies were significantly predicted by maternal booksharing behavior, even after controlling for child's age, maternal education and child's gender. Follow-up analyses indicated the relationship between booksharing and receptive vocabulary was significantly stronger for girls than for boys. These findings demonstrate a link between booksharing and early word learning and shed light on the role sociocultural factors play in language acquisition from a very young age."

Effects of language input and environment

07/16/2024

Interaction of Instruction and Cross-Situational Statistics on Child Language Learning

Wensi Zhang; Padraic Monaghan; Patrick Rebuschat

"Statistical learning, during which learners track the statistics in the environment, is an important contributing factor to language acquisition both in terms of acquiring vocabulary and grammar of language. However, the extent to which statistical learning is a key contribution for children learning an additional language is less clear. Also, statistical learning is generally conceived as involved in implicit language learning, and it is unclear whether explicit instructions can interoperate with statistical learning in supporting children's additional language learning.

In our study, we investigated the extent to which children could learn both vocabulary and grammar from cross-situational statistics, and also tested the effect of explicit instruction over the language structure on learning. We trained 50 children aged 7 to 10 to learn complex transitive sentences relating to a complex scene, under two different learning conditions: implicit and explicit instruction condition. Children had to learn vocabulary and grammar simultaneously through tracking the co-occurrence of the words in sentences and objects and actions in animated scenes.

Results showed that children in both conditions successfully learned the grammar, but not the vocabulary, with the support of cross-situational statisticsThere was no evidence for an effect of instruction on grammar and vocabulary acquisition, though we did find an initial benefit to learning from explicit instruction about the language grammar. Furthermore, explicit instruction on grammar significantly improved the awareness of grammar knowledge (categorised based on responses from debriefing questionnaires), yet this increased explicit awareness did not relate to grammar learning. The results have implications for theories of statistical learning, shedding light on our understanding of its developmental differences across the lifespan as well as the potential contribution of explicit information on learning. The study also has practical implications for optimising interactions between language teaching strategies and the child's learning environment."

Effects of language input and environment

07/16/2024

Input variability in early language acquisition: The impact of diverse interlocutors

Eva Aguilar-Mediavilla; Anna Amadó; Melina Aparici; Llorenç Andreu; Mònica Sanz-Torrent; Francesc Sidera; Walter Arón Huarhua Barrerac; Elisabet Serrat-Sellabona

"Language acquisition is influenced by the quantity and quality of input language learners receive. Furthermore, children's language skills would also be influenced by the variability of interlocutors providing input. The present study aims to explore if the number of interlocutors of children is related to their expressive language level.

Parents of 160 children (M = 22.8 months, SD = 5.1, Range = 15 to 31 months) completed the brief form of the MacArthur-Bates-CDI-II inventory in Catalan. This form includes a list of production words, a question about the child's word combination, a list of simple and a list of complex sentences, and the three longest sentences to calculate the Mean Length of Utterance (MLU). Parents also answered several general questions, including the number of different people that the child communicated with weekly.

Results showed that the number of different interlocutors correlated with the MLU (r = .300, p = .005) but not with age (r = .063, p = .442), vocabulary (r = .134, p = .099), nor complex sentences (r = .084, p = .3). Splitting the children by word combination, significant relations were found between the number of different interlocutors and vocabulary (r = .382, p = .012) in children that do not combine yet, and with the MLU in those that combine (r = .300; p = .005). Regression analyses confirm that interlocutor variability influences vocabulary acquisition and MLU.

These results indicate that more opportunities for socio-communicative diversity lead to greater expressive vocabulary in younger children and greater syntactic development in older ones. As the literature suggests, exposure to language spoken by different talkers results in faster and more accurate development than exposure to the same items spoken by a single talker."

Effects of language input and environment

07/16/2024

Children's sensitivity to referential cues: Strong effect of culture, weak effect of multilingualism

Akiko Okuno; Andrew Cheng; Farzana Ali; Angelica Lai; Stefanie Yi; Reiko Mazuka; Henny Yeung

"Successful communication requires understanding linguistic and social-referential information like eye-gaze and pointing. Some studies show multilingual children are more sensitive to referential cues for inferring a speaker's intention. However, cultural factors that co-occur with multilingualism are relatively understudied, although culture can affect how people take contextual information. Here we explore the influence of either cultural (Asian versus North American) or linguistic practices (multilingual versus monolingual exposure within North America) on children's referential understanding.

The children (2;0-3;5) participated in the two online tasks: Reverse categorization (RC) and Animal Hide-and-Seek (AHS). The RC task assessed executive function (EF) as a baseline, and 87 children (36 Japanese monolingual, 30 North American monolingual and 21 bilingual) were asked to place the baby and mommy animal characters into the small "baby box" and the big "mommy box", but after rule-switching, they were asked to reverse which box the animal went into. The AHS task evaluated the sensitivity to referential cues. Children had to find hidden animal toys based on referential cues provided by a woman standing behind one box while pointing or looking at the other (correct) box. Thus children had to override spatial cues to find the toy. Data from each trial (correct or incorrect) were entered into logistic mixed regression models.

North American children did not differ from Japanese children in the RC task, but in the AHS, the Japanese monolinguals outperformed both North American monolingual and multilingual children. Critically, no differences between monolingual and multilingual children were observed on the AHS task. Together, results suggest strong effects of culture, and no effects of multilingual input in children's sensitivity to referential cues, which calls for a reanalysis of multilingual advantages on this task. Cultural effects will be discussed in terms of Holistic versus Analytical thinking."

Effects of language input and environment

07/16/2024

(Pre)Literacy acquisition in a shallow orthography. Longitudinal evidence from mono and bilinguals

Emanuele Casani

"Many cognitive and neuropsychological studies have emphasized the foundational role of language, metalanguage, and executive functions in literacy development. A debate about whether bilingual children have an advantage in some cognitive and metalinguistic areas has also emerged. However, there is a lack of longitudinal research on preliteracy skills, their relationship with writing, and their bilingual acquisition, particularly in shallow-orthography languages. This study addresses this gap.

The aims are to investigate longitudinally how diverse preliteracy skills contribute to early literacy development in a shallow-orthography language (Italian) and possible acquisitional differences between monolingual and bilingual children. The effects of different interventions on typical and atypical preliteracy and literacy development are also explored.

A cohort of 172 children (96 Italian monolinguals+76 mono-literate bilinguals speaking different heritage languages, matched for age, gender, and SES) were monitored from the last year of kindergarten to the 2nd/3rd grade of primary school. Fifteen abilities involving language, metaphonology, RAN, working memory, and literacy were tracked through 5 testing sessions. Three subgroups received two cycles (kindergarten+1st grade)

of 3 different interventions [metaphonology(N=18), RAN(N=11), or graphics(N=11)]. The others were used as controls.

Reading and writing showed their multi-component nature. A four-step acquisitional pattern emerged, where different preliteracy skills predict specific literacy portions in distinct developmental times. (Pre)Literacy acquisition proceeded similarly in monolinguals and bilinguals, with some variations in acquisition pace attributed to the reduced amount of Italian input received by bilinguals. Bilinguals did not outperform monolinguals in any measure, suggesting that the putative bilingual advantage reported by someone has no cognitive nature. Two (meta)phonological measures emerged that can be used as possible testing tools for (meta)phonology since kindergarten, regardless of children's language dominance. RAN revealed itself as a measure of phonological automaticity. The three interventions showed different effectiveness, provided they are multi-component, timely planned, and reinforced during early literacy acquisition."

Language and literacy, dyslexia and language

07/16/2024

Reading development and phonological awareness: fluent vs. non-fluent readers

HARUKO MIYAKODA; Mina Nakagawa; Keiko Hara

"Phonological awareness plays an important role in the development of language. Therefore, it is essential that the child's phonological skills be assessed accurately in order to predict and to take early measures.

Although methods of measuring phonological awareness have been established, most measurements deal with a very limited range of phonological units. For example, in the case of English, assessment is usually based on either the phoneme or the syllable. (e.g. Abba and Selwyn-Barnett 1999), and in the case of Japanese, the mora (cf. The Japanese Articulatory Test). If, however, acquisition starts from the larger units and moves on to the smaller ones (e.g. Hirsh-Pasek et al. 1987, 1992), then focusing mainly on the mora unit may not be adequate in correctly assessing the phonological knowledge of a child.

This study examines the relationship between phonological awareness and reading of Japanese speaking children, taking into consideration a wider range of phonological units other than the mora. 127 pre-school children between the age range of 3 to 6 participated in our experiment, which consists of two aspects: first, the fluency of word reading was evaluated and examined from the perspectives of speed, accuracy, and prosody; second, the children's phonological manipulation skills were examined based on segmentation, isolation, deletion, and reversal tasks. The results of these two aspects were further compared in order to tease out the characteristics that differentiate fluent children from non-fluent ones.

The results obtained are as follows. First, fluency in word reading correlates strongly with the results of the reversal tasks. Second, prior to processing at the mora level, Japanese speaking children process and prioritize larger units (i.e. foot or syllable). Particularly, the error patterns of non-fluent readers indicate that they have less mora awareness and are influenced more by the foot or syllable compared to fluent ones."

Language and literacy, dyslexia and language

07/16/2024

An universal intervention in oral language abilities for improvement later reading abilities

Raquel Balboa-Castells; Esteban Peñaherrera; Shafaq Rubab; Mònica Sanz-Torrent; Llorenç Andreu

There is broad agreement that children's general oral language ability in preschool can be considered a unitary factor in predicting future reading development in primary education. However, evidence of the effectiveness of interventions that promote oral language abilities in the early years is sparse in languages others than English. This study investigaded the effectiveness of a primary intervention program directed to all students in the classroom (Tier 1 or universal suport) to improve phonological awareness (PA), vocabulary (VC) and morphosyntax (MS) in kindergarten. 65 5- to 6-year-old Spanish-Catalan bilingual children from two public schools with similar educational project models, working methodologies, equivalent socio-economic and cultural context participated in a prestest-postest design. Children in the experimental group received a total of 30 sessions of intervention. The program comprised three 60-minute sessions per week, one for each component (PA, VC, MS) applied by a trained research assistant over 10 weeks. Children in the control group receive instruction-as-usual in class. The results indicate that the experimental group showed greater gains in different measures, including general oral expressive language, phonological awareness, and vocabulary in comparison to the control group. However, morphosyntax measures did not improve between groups. A systematic and

organized intervention program at an early age boosts oral language skills. Future research will also explore the improvements in later reading abilities in primary education.

Language and literacy, dyslexia and language

07/16/2024

Clinical Practice of Speech and Language Therapists with children with language disorders

Mafalda Azevedo; Marisa Lousada; Fátima Martins

Children with Autism Spectrum Disorder (ASD) and Developmental Language Disorder (DLD) often have difficulties in syntactic acquisition which can influence both socialization and behavior and therefore benefit from speech and language therapy intervention. Despite this, there is sparse research into the clinical practice of the speech and language therapist (SLT). The aim of this study is to analyze the clinical practice of SLTs with preschool children with syntactic impairment. A cross-sectional survey was conducted in Portugal, using a web-based questionnaire with 109 questions divided into several sections, specifically designed for the purpose of this study. A total of 357 participants responded. Regarding the academic background, 48% of SLTs had a master's degree and only 20% had additional training in syntax. Considering professional experience, 89% of SLTs work with preschool children with syntactic impairment, with both ASD and DLD. For assessment, they reported using a combination of informal and formal methods of assessment (ASD: 74%; DLD: 76%). For intervention, the majority of the SLTs (ASD: 90%; DLD: 87%) reported that they have never used a specific programme, method or approach for syntactic intervention. Over 33.6% of SLTs report not feeling confident in assessing syntactic skills in preschool children with syntactic impairment, while 29.3% report not feeling confident in intervening with this population. Between 80 and 90% of SLTs report the need for more academic knowledge and practical training in the areas of prevention, assessment and intervention. There seems to be a lack of scientific evidence regarding the procedures used for intervention by SLTs with preschool children with syntactic impairment in Portugal. The lack of confidence experienced by SLTs may be related to their perceived need for more academic and practical training, highlighting the need for such training in syntactic disorders in both graduate and post-graduate programmes for SLTs.

Language in other neurodevelopmental conditions

07/16/2024

Interrelationships between spatial cognition and language in autism spectrum disorder

Caroline Larson; Agata Bochynska; Mila Vulchanova

"Introduction. Though visuospatial skills are often viewed as a relative strength in autism spectrum disorder (ASD), difficulties are observed in spatial cognition and spatial language (Bochynska, Coventry et al., 2020; Bochynska, Vulchanova et al., 2020). Development of spatial cognition and language are thought to be interrelated, through shared concepts and verbal mediation (Coventry & Garrod, 2004; Larson et al., 2021). We examined the specificity of this association using mental rotation tasks with objects and figures; objects may be more easily rotated (Kail et al., 1980) and more closely linked to language (i.e., through labels like ball, pencil) than abstract figures.

Methods. Participants were twenty-five children and young adults with high-functioning ASD and twenty-five pairwise age- and IQ-matched (p's > .53) neurotypical peers (NT). We administered a mental rotation task with four conditions, 2-dimentional (2D) objects, 3D objects, 2D figures, and 3D figures, and the Norwegian Test of Language Development (TOLD: I) as our measure of language.

Results. The ASD group was less accurate and slower to respond than the NT group across mental rotation conditions (p's < .01), but there was no group difference in the relative difficulty of figures versus objects or 2D versus 3D (p's > .28). These findings suggest difficulty with spatial cognition regardless of object, figure, 2D, or 3D distinctions in ASD. Relatively better language was associated with faster reaction time for the NT group, but not for the ASD group. This group difference was significant for figures, objects, and 2D conditions (p's < .05), indicating that language was associated with performance efficiency to a greater degree in the NT than ASD group.

Conclusions. Current findings suggest that autistic individuals experience widespread challenges in abstract representation regardless of the domain of cognition. Moreover, these challenges appear to impair interrelationships between visuospatial and language processes."

Language in other neurodevelopmental conditions

07/16/2024

The Effects of the Pragmatic Intervention Programme (PICP): A Non-Randomized Controlled Trial

Tatiana Pereira; Margarida Ramalho; Mafalda Azevedo; Pedro Sá Couto; Marisa Lousada

Introduction: Using language for social purposes can be a real challenge for children with Autism Spectrum Disorder (ASD) and Developmental Language Disorder (DLD) with pragmatic impairments, which may result in learning, socialization, and mental health difficulties. Early intervention is therefore crucial. The Pragmatic Intervention Programme (PICP) was developed and content-validated in Portugal. Despite the positive effects of PICP already known in both populations, the effects need to be established with a larger sample and analysed separately for each neurodevelopmental condition. This study aims to determine the effects of PICP on preschool-age children with ASD or DLD with pragmatic language impairment. Methods: A non-randomized controlled trial has been conducted. The children (n = 32) were assigned to the intervention (n = 18) or the control group (waiting list) (n = 14). Each child attended 24 PICP-based intervention sessions provided by a Speech and Language Therapist, biweekly, in preschool. The primary outcome measure was a Goal Attainment Scale (GAS) rated by parents and early childhood educators. Secondary outcomes include parent/educator-reported communication skills (Escala de Avaliação de Competências Comunicativas – EACC) and an assessment of the child's general language ability (Teste de Linguagem—Avaliação da Linguagem Pré-Escolar – TL-ALPE). Results: The GAS results show that all the children in the intervention group made progress. Statistically significant differences between intervention and control groups were found for all secondary outcomes (EACC-Parents Difference (U = 12.00, p < 0.001), EACC-Educators Difference (U = 12.00, p < 0.001), and TL-ALPE Difference (U = 56.50, p = 0.008)), considering the differences between pre-and post-intervention assessments. Conclusions: The main findings reinforce that the PICP improves language in preschool-age children with ASD and DLD with pragmatic language impairments. Differences between conditions will be discussed. These results are crucial and will contribute to future research and evidence-based practice in the field.

Language in other neurodevelopmental conditions

07/16/2024

Spoken sentence comprehension and production in children with hearing loss: A systematic review

Anali Taboh; Camila Sperman; Carolina Gattei; Diego Shalom

"The language development of children with hearing impairment who access spoken language through hearing devices (CHI) usually lags behind that of children with typical development (CTD). To improve therapeutic and educational practices for these children, it is important to understand which specific aspects of language represent difficulties for them and why. This work aimed to review the evidence on CHI's morphosyntactic abilities at the sentence level and how these relate to different demographic, clinical and cognitive factors.

We carried out a systematic review to find reports of CHI's comprehension and production of specific types of structures, focusing on simple sentences, topicalized sentences, passives, relative clauses, and wh-questions. Six databases were searched for published and unpublished works written in five different languages. Sixty-two relevant studies reported in 38 records were retained. Simple active sentences with canonical order were generally found to be preserved in CHI. Comprehension and production of passive sentences was understudied; some reported it to be similar to that of same-age CTD, but there is also evidence of delayed acquisition. Regarding topicalization, relative clauses and wh- questions, there is abundant evidence that they are specially difficult for CHI. While their comprehension and production of object relatives and object questions is usually below that of younger CTD, the evidence for subject relatives and subject questions is mixed. Variability within groups of CHI was recurrently reported.

Reports on the relation between performance on these specific syntactic structures and age, duration of hearing experience, age at fitting with hearing devices, and memory are inconsistent. Accounts of CHI's abilities at the sentence level proposed in the studies retained point to perceptual limitations, insufficient exposure to language early in life, and underdeveloped memory and sequencing abilities caused by insufficient exposure to sound early in life. Online processing and longitudinal studies are areas of vacancy."

Language in other neurodevelopmental conditions

07/16/2024

Preterm and full-term infants' pointing and its relationship with caregivers' pointing

Caterina Verganti; Chiara Suttora; Verena Frank; Mariagrazia Zuccarini; Valentina Graziosi; Arianna Aceti; Luigi Corvaglia; Carina Lüke; Alessandra Sansavini; Annalisa Guarini

"Introduction: Research explored the use of pointing in infants and its predictive role for language acquisition. Although preterm birth has been shown to negatively affect language development, the investigation of pointing development in preterm infants is still very limited, with no studies on the role of caregivers' pointing.

Aims: This study aimed to examine preterm versus full-term infants' pointing at 18 months. Additionally, it explored differences between groups in terms of caregivers' pointing and its relationship to infants' pointing.

Methods: Forty 18-month-old infants, twenty preterm (MGestationalAge = 29.84, SD = 3.11; 50% female) and twenty full-term (MGestationalAge = 39.20 weeks, SD = 1.51; 50% female), and their primary caregivers participated in the study. None had neurological, sensory, motor, or cognitive deficits. Corrected age was considered for preterm infants. The "decorated room" assessment was employed to elicit pointing. Infants' pointing onset (presence/absence), pointing frequency, execution modality (whole-hand, index-finger), and caregivers' index-finger pointing were coded with ELAN software. The caregiver-infant's pointing sequential patterns were analysed using sequential analysis (GSEQ).

Results: Significant differences between groups emerged in pointing onset, as some preterm infants did not point at 18 months yet, whereas all full-term infants did. Additionally, preterm infants produced significantly fewer pointing gestures, particularly index-finger pointing, than full-term infants. Caregivers' pointing did not significantly differ between groups. Sequential analysis revealed that for full-term infants, caregivers' pointing significantly followed infants' pointing, whereas for preterm infants this pattern was not displayed. Conversely, neither group exhibited a significant pattern of caregivers' pointing preceding infants' pointing.

Conclusions: Findings suggest persistent weaknesses in pointing development and use in preterm infants up to 18 months. Moreover, preterm birth affects caregiver-infant sequential communicative patterns. These individual and dyadic findings highlight an atypical communication development in preterm infants, which could impact language acquisition, leading to significant implications for early interventions."

Language in other neurodevelopmental conditions

07/16/2024

Distinctive errors' pattern between children with ASD and DLD - evidence from article production

Liron Rosen; Rama Novogrodsky

"Distinctive errors' pattern between children with autism and children with developmental language disorder - evidence from Article production

While both children with Autism Spectrum Disorder (ASD) and children with Developmental Language Disorder (DLD) exhibit language difficulties across different language domains, these difficulties manifest in pragmatics for children with ASD and primarily structure deficits such as grammar for children with DLD. To test these domain-specific deficits, as well as the error pattern for each population, we explored article production in Hebrew-speaking children. In Hebrew, felicitous use of the definite marker ""the"" requires both pragmatic knowledge such as speaker/hearer assumptions of a shared reference, and grammatical knowledge such as noun-adjective agreement (in some languages).

Hebrew-speaking children aged five to nine with ASD (N=20), DLD (N=16), and Typical Development (N=28) were tested on the production of definite and indefinite articles on a structured sentence elicitation task and a semi-structured narrative production task.

Results showed that children with ASD scored significantly lower on definite contexts compared to the other two groups, while children with DLD exhibit near typical article choice. This pattern was similar for both tasks, though differences were more substantial for the elicitation task. All groups showed mainly pragmatic errors, but only children with DLD manifested morpho-syntactic errors.

These findings suggest that article choice is based primarily on pragmatic knowledge. However, the overall low performance of the ASD group on definite articles and the unique patterns of morpho-syntactic errors of the DLD group support distinctive underlying deficits in these two clinical groups."

Language in other neurodevelopmental conditions

07/16/2024

Tracing the communicative development in Czech-learning children with cochlear implants

Michaela Svoboda; Kateřina Chládková; Filip Smolík

"Every year in Czechia, about fifty children born deaf or hard of hearing receive a cochlear implant (CI). However, care for these children is fragmented across the health, social, and education sectors, making it challenging to systematically track their language development. While Czech clinicians have access to several diagnostic tools (e.g. ISD, LittlEars, NAMES or IT-MAIS), there is little to no effort to methodically anchor their use in practice. This means that to date, it has been impossible to assess the acquisition of Czech as L1 in this population. Not only does it cast doubts on the benefits of the device or leads to unrealistic beliefs (which makes it difficult for parents to make informed decisions) but also makes it impossible to reflect potential progress when adjusting the individual therapeutic plan.

In our contribution, we will present preliminary results of the first quantitative study on this population focusing on mapping language abilities in young Czech implantees during the first six years of life. We employ the Czech adaptation of MacArthur-Bates Communicative Inventories: Word and Sentences (Smolík et al. 2017), following Thal et al. (2007) that showed the American-English CDI can provide valid measures of language development in CI children through the first three years postimplantation. We adapted the tool by including items on sign-language development. Only children of hearing parents without other reported disabilities are included in the study. The preliminary results we have obtained so far support previous observations of the remarkable variability in s language outcomes in children provided with CIs (confirming a previous observation that CI children are ""moving targets"" Geers, 2006). The data highlight several possible contributing factors (such as duration of CI use or age of implantation), whose effects will be analysed and presented at the conference, along with the longitudinal data."

Language in other neurodevelopmental conditions

07/16/2024

Do gestures clarify potentially ambiguous linguistic forms in children's narratives?

Camille Dupret; Corrado Bellifemine

"This study aims to observe how children clarify, multimodally, potentially ambiguous referring expressions (REs) in narratives. Indeed, young children usually make an important use of clitic pronouns to mention weakly accessible referents in discourse. However, they structure their speech by also using gestures to establish reference, like adults who use gestures to reinforce or clarify the pronouns they use to mention the story characters (Alamillo et al., 2010; Azar et al., 2019).

30 French-speaking 6-to-9 y.o. children were video-recorded in two conditions: 15 children recounted a story from a textless set of pictures visually shared with the observer (PRAESENTIA); 15 children recounted a cartoon extract to their parents, who had not watched the clip (ABSENTIA). We analyzed the linguistic form (strong vs weak) of REs (n=1173) and their position in discourse (first mention, maintaining, switching). The gestures (n=294) associated with REs were analyzed according to their type (deictic, iconic, non-referential).

Results show that the two groups used multimodal reference similarly, preferring the speech-only modality. All groups also used the same proportion of multimodal linguistic forms, in the same positions on the referential chain. Potentially ambiguous pronouns rarely appeared in first mention but rather in switching. They were also accompanied by more gestures than lexical forms. Thus, even if children relied slightly more on gestures to clarify pronouns than lexical forms, they did not use more gestures in ABSENTIA. However, the PRAESENTIA group produced more deictic gestures with REs while the ABSENTIA group used more iconic gestures.

Thus, children do not primarily use gestures to disambiguate the reference of potentially ambiguous forms, but they are also influenced by the interlocutor's shared-knowledge and their ability to infer implicit information. Moreover, they adapt their gesture use to the interactional setting in order to organize and clarify their speech content."

Typical first language acq.: narrative, pragmatics, discourse

07/16/2024

Development of Narrative Memory Span in Preschool Children

Jan Krása

"The situation model is a mental representation that individuals construct while comprehending text or discourse. It captures the reader's understanding of the text's content, facilitating the integration of information

from various parts of the text into a coherent mental model. These situation models persist longer in memory compared to other levels of text representation. Situation models incorporate various aspects, including spatial, temporal, causal, relational, sensory, motivational, and other elements of the described events, projecting themselves as textemes within the text.

Our research investigated the development of narrative memory span, measured in terms of the number of textemes or situation models, in preschool children (N = 95). Older children, aged between 3 and 7 years, demonstrated better recall of textemes compared to younger children. We also observed a positive effect of linguistic competence, as measured by two standardized tests of linguistic skills (receptive vocabulary test and memory for sentences test), on the number of recalled textemes.

Our current research explores the relationship between thematic or taxonomic preferences and narrative memory span in preschool children. This study aims to confirm or refute the hypothesis suggesting that thematic thinking, episodic memory, and narrative memory span are closely related or synonymous concepts."

Typical first language acq.: narrative, pragmatics, discourse

07/16/2024

The Development of Evaluative Function of Narrative in Adolescence

Hale Ögel Balaban; Büşra Seldüz

Previous studies on childhood indicated a positive relationship between the development of evaluative function of narrative referring to the expression of the interpretation of events from the narrator's point of view and theory of mind (ToM). Cognitive and social changes during adolescence might contribute to this relationship. The present study aimed to examine the development of evaluative function and its relationship to ToM in adolescence. Twenty adolescents (Mage = 15.05, SDage = 0.39), 32 10- and 11-year-old children (Mage =10.78, SDage = 0.42), and 15 adults (Mage = 20.60, SDage = 0.99) told a narrative in Turkish with the picture book 'Frog, where are you?" (Mayer, 1969) and participated in two second-order false belief tasks adapted from Flobbe's (2008) and Perner and Wimmer's (1985) ToM stories. One-way ANOVA on the evaluative function score calculated as the ratio of the number of clauses containing at least one evaluative device to the total number of clauses indicated the main effect of age, $F(2, 64) = 16.39$, $p < .001$, $\eta p2 = .34$. Post-doc analysis revealed that adolescents' evaluative function score (M = 0.50, SD = 0.12) was higher than that of 10- and 11-year-olds (M = 0.34, SD = 0.13), but not different from adults' score (M = 0.55, SD = 0.12). Since 90% of adolescents passed both ToM tasks, the relationship between the evaluative function and ToM could not be tested. However, the finding that mental state terms referring to characters' internal states such as emotions and thoughts; contrastive expressions indicating events that are unexpected or conflicting with expectations such as 'but', 'quite the contrary'; and evaluative remarks expressing the narrator's subjective viewpoint such as 'of course', 'in fact' were used more by adolescents compared to children suggested the relationship between narrative skills and social, linguistic, and cognitive changes during adolescence.

Typical first language acq.: narrative, pragmatics, discourse

07/16/2024

The Acquisition of Bare Classifiers and Definiteness in Cantonese

Ian Chow; William Snyder

"This study assesses Cantonese-speaking children's ability to express definiteness through classifiers in an adult-like manner. Despite Bošković's (2007) NP/DP Parameter and Chierchia's (1998) Nominal Mapping Parameter, both of which highlight the lack of determiners in Cantonese, Cheng & Sybesma (1999) claim that Cantonese achieves several functions of determiners, including definiteness, through bare classifiers [Cl+Noun].

To evaluate children's understanding of definiteness, we adapted a method from recent work on English. Ying et al. (2023) argue against an earlier view that young children overuse English ""the"". They show that even before age two, children are sensitive to definiteness. Specifically, adults' frequency of using ""the"" varies, in predictable ways, across different contexts. Ying et al. found the same patterns in young children.

Is sensitivity to definiteness also detectable in young children's Cantonese? Using longitudinal corpus data (CHILDES Lee/Wong/Leung), we conducted case studies on three Cantonese-speaking children (HHC, ages 2;04;08–3;04;14; LLY, 2;08;10–3;08;09; LTF, 2;02;10–3;02;18). Sensitivity to definiteness was assessed by checking for a correlation, across different recording sessions, in the child's versus the adult interlocutor's frequency (per 1,000 utterances) of bare classifiers. The logic was that appropriateness of a definite expression

varies across different situations, but in each recording, the adult and the child were discussing exactly the same situations.

Two of the three children (HHC, LTF) had significant (p<.05) positive correlations, as expected if they were sensitive to definiteness. (The other child's correlation did not reach significance.) Moreover, no child was simply imitating the adult; all could be seen introducing novel bare classifiers into the conversation. Hence, Cheng & Sybesma's claim that bare classifiers in Cantonese are comparable to definite articles in English is supported by our evidence that they have similar ages of acquisition."

Typical first language acq.: narrative, pragmatics, discourse

07/16/2024

Personal Narrative: Understanding Language, Literacy, and Cognitive Skills Through Storytelling

Caryn Iwakiri; Virgina Marchman; Janet Bang

By school-age, telling stories about personal events is an important verbal conversational skill that supports engagement in social interactions. Through storytelling, children can consolidate memories and develop their own self-identities (Westby & Culatta, 2016). Yet, in what ways do children draw on language, literacy, and executive function (EF) skills to construct these stories? In this study, we included 43 monolingual English-speaking 10-year-old children (sex: 19 M, 24 F; age: M=10.4, SD=0.62, range=9.33-12.42) from diverse SES backgrounds (Hollingshead Index; M=45.08 SD=11.68, range=15-66); data are presented from a random sub-sample (n=9) for preliminary analyses. Children were prompted to tell personal narratives (Peterson & McCabe, 1983), which were later coded for macrostructure elements (e.g., modifiers and dialogue; higher scores (range 0-20) indicate more complex/expressive stories; Ukrainetz & Gillam, 2009) and microstructure features (i.e., word tokens and types, story length, MLU). Children also participated in a battery of language, literacy, and EF standardized tests including Clinical Evaluation of Language Fundamentals (CELF-5 Core Language, CELF-4 Working Memory), Woodcock-Johnson (WCJ-IV; Broad Reading), and the Behavior Rating Inventory of Executive Function (BRIEF-2). Macrostructure scores (M=7.13, SD=0.96) were positively correlated with microstructure features of tokens (r=.38), types (r=.33), and MLU (r=.46), suggesting that more expressive stories contained more diverse vocabulary and more grammatically-complex utterances. No relations were seen for story length (r=.008). Interestingly, children's macrostructure scores were unrelated to standardized tests of language skills (CELF-5, r=-.09; CELF-4, r= .17), but were positively correlated to literacy (WCJ-IV, r=.35) and EF skills (BRIEF-2, r=.31). These findings suggest that expressive storytelling for children draws on multiple language and cognitive skills, and will inform the design of hierarchical linear regressions, which will be conducted on the full sample.

Typical first language acq.: narrative, pragmatics, discourse

07/16/2024

The development of different filled pause functions in 2-5 year old English-speaking children

Minna Kirjavainen; Alexandre Nikolaev

"Filled pauses such as 'um' and 'uh' (e.g., I'm going to tell um…Mrs Cwww that you can read now; Uh you don't put that there; Um…I think they just bite on sticks, don't they?) were historically seen as noise produced when the speaker encounters problems in speech planning/production. However, more recently, filled pauses have been identified as multifunctional linguistic items - in addition to the processing functions such as their usage in disfluent and repair contexts, they also have pragmatic functions denoting for example politeness and uncertainty. Filled pauses have been studied for decades in adult language and, to some extent, in relation to children's non-typical language development. However, the development and usage of these items in typically developing children are not yet well understood, and as far as we are aware, no extensive longitudinal studies investigating the development of different functions of filled pauses in child language have been previously reported.

We will present a corpus analysis between the ages of 2;0-4;11 of three densely collected datasets from British English-speaking children: Fraser and Eleanor (MPI-EVA-Manchester corpus) and Thomas (all available on CHILDES). The analyses aim to investigate, from their earliest occurrences, the emergence and usage of the different functions (disfluency, repair, politeness, uncertainty) of um and uh, and the extent to which the emergence and usage corresponds to the maternal usage. Our results suggest that the children learn filled pauses from the input, but that different functions (processing vs. pragmatic) of filled pauses develop at different rates. We will discuss our results in the context of processes that underlie children's language development and the difficulty associated with different items."

Are English-acquiring children indeed less socially fanatic than their Dutch peers?

Jing Lin

"Conditionality is a crucial concept when communicating with young children, which can be expressed in almost every language by a conditional complementizer like if in English. This holds for Dutch, as well. Additionally, Dutch also uses sentences like (1) for this function:

(1) Kook jij , dan was ik af.

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cook      you              then    clean    I        off


'If you cook, I'll clean.'
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Constructions like (1), a.k.a. indicative V1-conditionals [1-6], exhibit the same syntax as polar questions. They have been argued to diachronically originate from dialogues between two participants containing a question-answer pair, which subsequently develop into a so-called fictive discourse pattern (Figure 1) [7].

Figure 1

Since dialogues containing question-answer pairs like in Phase 1 above represent a very frequent discourse pattern even in child-directed speech, this paper hypothesizes that the acquisition of indicative V1-conditionals mirrors their diachronic emergence. Preliminary data collected with eight monolingual Dutch children (1;05-5;10) in CHILDES [11] (Groningen [8]; VanKampen [9]) seems to confirm this. There is a so-called pseudo polar question stage (i.e. Stage 4 below) where the child produces a polar question not for a response from the caregiver, mimicking the fictive discourse pattern in Phase 2 (Figure 1).

Figure 2

If the synchronic emergence hypothesis is on the right track, it predicts the pseudo polar question stage (i.e. Stage 4 in Figure 2), to be completely absent in child English. The reason concerns the fact that present-day English no longer exhibits indicative V1-conditionals, although they were possible strategies in Old and Middle English [10]. Taking into consideration that English polar questions involve the movement of an obligatory auxiliary, which is not the case in Dutch, this paper further attributes the absence of indicative V1-conditionals in modern English to a different acquisition path of polar questions. English data collection is still work-in-progress."

Does language affect cognition: Sensitivity to relational similarity in Dutch 3-year-olds

Andriana Sabov; Caroline Rowland; Daniel Haun; Evan Kidd; Elisa Felsche

This study investigates the role of language in the acquisition of relational similarity. Relational similarity is the fundamental aspect of analogical reasoning that allows humans to see meaningful connections based on relationships between objects. A compelling idea is that language plays a crucial role in the development of relational reasoning (e.g., Loewenstein and Gentner, 2005), at least in the development of the understanding of more complex abstract relations. However, the empirical evidence for this remains inconclusive. In this study, we tested the influence of linguistic knowledge on Dutch 3-year-old children's ability to identify spatial relations (e.g., top-top, bottom-bottom; following Christie et al., 2016) in both symmetrical and asymmetrical configurations. Children saw a sticker being hidden inside a box placed either on a top, middle or bottom shelf of a cupboard and were asked to search for another sticker in an equivalent position in a second cupboard that was placed next to the first. Successful retrieval of the second sticker relied on understanding spatial relations (e.g., if the first sticker was hidden in the top box, the second sticker would also be hidden in the top box). General language proficiency and knowledge of spatial language were also tested. Preliminary results (N=51 tested so far from a full sample of 100) showed that children perform significantly better in the symmetrical condition compared to the asymmetrical condition, suggesting that they were matching on spatial relations but only when there was also a proximity relation (i.e., matching boxes were also closer to each other than non-matching boxes). Successful performance was correlated with the children's knowledge of spatial prepositions. These findings support the idea that the acquisition of spatial reasoning in 3-year-olds is correlated with

knowledge of spatial language, and highlights the possible role that language plays in the development of analogical reasoning.

Typical first language acquisition: lexicon

07/16/2024

Paternal factors and vocabulary growth relate differently in boys and girls

Annette Nylund; Pirjo Korpilahti; Anne Kaljonen; Pirrko Rautakoski

"Changes in the society have put more emphasis on the father´s role in early childcare. Fathers communicate with their children in other ways than mothers do, but also differently according to the sex of the child. Yet, there are few studies that focus on associations between paternal factors and early language development separately in boys and girls.

In this study we analyzed the impact of paternal factors, like time spent with the child, working less than full-time, and use of paternity leave, on vocabulary growth between 13 and 24 months of age in 354 boys and 331 girls. The participants were all recruited in an ongoing longitudinal study in Finland, Steps to the Healthy Development and Wellbeing of Children (the STEPS Study). Vocabulary growth was assessed with the MacArthur Communicative Developmental Inventories (CDI) for infants and toddlers.

Fathers working full-time spent less time together with their children compared to fathers working less. Fathers working full-time was also predictive of less vocabulary growth in boys. No difference was found in girl´s vocabulary growth in relation to how much the father was working. Majority of the fathers had made use of paternity and/ or parental leave. The mean time the fathers spent with their child was somewhat more for boys than for girls. However, no difference was found in vocabulary of boys or girls in relation to use of parental leave and time spent with the child.

The study shows the importance of fathers working less than full-time for language development in young boys. This emphasizes more studies on what in the language environment changes with fathers working less. The results also underscore the importance of analyzing environmental effects on language development separately in boys and girls."

Typical first language acquisition: lexicon

07/16/2024

Mechanisms underlying the learning of Mandarin classifiers: A novel classifier learning task

Ying Hao; Li Sheng; Lisa Bedore; Li Zheng; Dandan Liang

Mandarin is a classifier language. A classifier is placed between a number and a noun when speakers need to count (sān tiáo shéngzi - three ropes). Classifiers have meaning and typically co-occur with nouns that have convergent semantic properties (tiáo - long). Previous studies, using real classifiers, showed that semantic categorization and input frequency are potential learning mechanisms. This study continued the exploration using a novel classifier learning task providing a context in which semantic categorization of classifiers was clearcut (no exceptions to semantic rules) and input frequency was manipulated. 67 typically-developing Mandarin-speaking children and 62 Mandarin-speaking adults learned two novel invented classifiers. During a short training, each participant received 54 exposures for one classifier and 36 exposures for the other. Immediately after the training, production and comprehension of the two novel classifiers were tested. Testing items included familiar (presented during the training and testing) and unfamiliar stimuli (presented only during testing). Participants who were above-chance accurate in both familiar and unfamiliar conditions were regarded as using a semantic strategy. For children, there was a main effect of input frequency on production (p<.001). A subgroup of children (40%) was above-chance accurate on both familiar and unfamiliar stimuli in comprehension, indicating the use of a semantic strategy. For adults, a frequency effect was not found in production, and a majority of them (70%) used a semantic strategy in comprehension. Children may be in the process of establishing a semantic system and memorizing the arbitrary use of classifier-noun pairings, so they need to use both strategies. With a developed classifier-based semantic system, adults may be able to extract the semantic features using the amount of low-frequency classifier input. The task may have allowed an easy detection of the semantic properties encoded by classifiers, which supported the use of semantic learning strategy.

Typical first language acquisition: lexicon

07/16/2024

Structural proximity and the categorization of verbs in 14-month-old infants

Audrey-Anne Gilbert; Manuel Español-Echevarría; Rushen Shi

"Infants around 1 year of age begin categorizing nouns using adjacent determiners, but have difficulty categorizing verbs using adjacent subject-pronouns (Höhle et al., 2004; Shi & Melançon, 2010; Babineau et al., 2020). Here we consider one possible reason: although determiners are equally close to nouns than subject-pronouns are to verbs in terms of linear order, determiner+noun relation is syntactically closer because the former selects the latter as its complement whereas subject-pronouns do not select verbs. In contrast to subject-pronouns, auxiliaries are heads selecting verb phrases as their complement. We also consider verb inflectional morphemes, which are close to the verb-stem syntactically and morphologically. Even before age 1, infants segment frequent suffixes and relate bare stems with their inflected variants (Marquis & Shi, 2012; Kim & Sundara, 2020). We hypothesized that auxiliaries and verb-endings can bootstrap verb categorization in infants.

In a visual fixation task, French-learning 14-month-olds were familiarized with utterances containing pseudo-words preceded by French auxiliaries and ended with the most frequent verb-suffix /e/ (Experiment 1), e.g., Il a migé/cralé. "He has miged/craled". To assess the sole contribution of inflection, Experiment 2 familiarized infants with pseudo-words in /e/-suffix alternating with the bare stems (imperatives: Migez/Mige; Cralez/Crale). Both groups of infants were tested on their grammaticality discrimination. The test words co-occurred with a subject-pronoun (e.g., Tu miges. "You mige") in grammatical trials, versus with a determiner (e.g., Le mige. "The mige") in ungrammatical trials, the same test stimuli as in Shi & Melançon (2010) where 14-month-olds failed to discriminate grammaticality following the subject-pronoun+verb familiarization.

Results showed that both groups discriminated the test trials (Experiment 1: t(23)=-2.34, p=0.028; Experiment 2: t(23)=-2.683, p=0.013), demonstrating that babies can categorize verbs using structurally closer elements such as auxiliaries and verb-endings, or even endings alone; importantly, their categorization extends to new phrase structures, demonstrating syntactic productivity."

Typical first language acquisition: morphology, syntax

07/16/2024

COMPREHENSION OF NON-CANONICAL SENTENCES BY GREEK-SPEAKING CHILDREN: OBJECT RELATIVES AND PASSIVES

Eleftheria Geronikou; Arhonto Terzi

"Comprehension of non-canonical sentences may be challenging for preschool aged children. Studies on the acquisition of passives have shown that English-speaking monolingual children do not master them before the age of 6, and similar considerations hold for Greek. Object relative clauses (ORCs) also cause difficulties crosslinguistically, and it has been suggested that they may be used to screen for potential language delay in some languages. The aim of the present study is to investigate how Greek-speaking preschool-aged children's comprehension skills compare on these two types of non-canonical sentences.

The study involved a group of 36 typically developing Greek-speaking children aged 4.5-4.9 years. A picture-matching comprehension task was administered, covering Actives, Passives, subject relative clauses (SRCs), and ORCs. Children were shown sets of three pictures, depicting the target sentence, a sentence with the same characters but reversed theta-roles, and a distractor containing one of the previous characters. Additionally, cognitive abilities were assessed using the Ravens Progressive Matrices Test, and broader language skills with the Renfrew Action Pictures and the Expressive Vocabulary Test.

The findings revealed that children performed best in comprehending active sentences (87.5% accuracy), followed by SRCs (79.75%), ORCs (69.1%), with passive sentence comprehension (54.17%) scoring the lowest. Errors consisted of choosing the picture with reversed roles, with distractor choice being at a minimum (actives 0.8%; SRCs 0.8%; ORCs 1.3%; passives 0.9%). Paired samples t-tests demonstrated that passive constructions were the most challenging, i.e., significant differences in performance accuracy were observed between passive sentences vs. active sentences (t(35) = 12.81, p < .001); SRCs (t(35) = 8.23, p < .001); ORCs (t(35) = 6.41, p < .001).

In conclusion, findings suggest that passive sentences pose particular challenges for Greek-speaking preschoolers, leaving ORCs far behind. We attribute the difficulty to the manner passive sentences are formed in Greek."

Typical first language acquisition: morphology, syntax

07/16/2024

Putting lexical cues into discourse context: Production and comprehension of relative clauses

Silke Brandt; Jacky Chan; Anna Theakston

"Object relative clauses (ORCs; the dog that the cat chased) are typically more difficult to process than subject relative clauses (SRCs; the dog that chased the cat), for both children and adults. Yet, some studies have shown that if the embedded NP (the cat) is replaced with a pronoun or mentioned previously (as is common in spoken language corpora), ORCs can be made easy. However, experiments with children have, to date, mostly presented relative clauses (RCs) in isolation, without any discourse context.

First, we examined the relationship between the lexical and discourse-level characteristics of embedded NPs in RCs through densely collected English-speaking developmental corpus data (range = 2-5 years) from three caregiver-child dyads.

We analysed 1126 and 495 RCs from caregivers and children respectively and coded type of RC (SRC/ORC), and (1) type (pronoun/proper noun/lexical NP), (2) givenness, and (3) topichood of the embedded NP. Focusing on child speech, we found that an RC was more likely to be an ORC when the embedded NP was not given (contrary to previous findings in adult corpora) but, in line with previous work, an RC was more likely to be an ORC when the embedded NP was a pronoun. Our findings suggest that young children draw on both lexical and discourse-level cues when producing RCs.

Second, we conducted an eye-tracking study with a picture-selection task with 3- (N=48) and 5-year-olds (N=48) to examine whether and how embedded NP type and givenness individually and/or jointly influence young children's online processing of ORCs and SRCs. Preliminary accuracy and response-time results suggest that ORCs were more difficult to process, especially when the embedded NP was expressed by a pronoun. However, when pronouns referred to given rather than new entities, processing became easier, suggesting that children are sensitive to interactions between discourse-level and lexical cues."

Typical first language acquisition: morphology, syntax

07/16/2024

Grammatical skills and working memory in German children at school age

Eva Wimmer

Past research showed that grammatical skills are closely linked to working memory (WM) during language acquisition (e. g., Ellis-Weismer et al., 2017). However, it is still largely unclear how WM skills associated with different WM components – particularly verbal short-term memory (vSTM) and central-executive (CE) (cf. Baddeley et al., 2021) – and specific grammatical skills are intertwined. Recent studies suggest a decisive role of central-executive WM for receptive (Viesel-Nordmeyer et al., 2020) as well as expressive grammatical skills (Delage & Frauenfelder, 2020) in typical acquisition. The aim of the present study is to further clarify the supposed relation between grammatical abilities and WM skills by specifically focusing on the role of WM skills for sentence production and syntactic complexity. Data will be presented from n = 31 monolingual German children aged 10 years (M = 9;10) who were part of a longitudinal study (Lüke et al., 2020; Viesel-Nordmeyer et al., 2022). Three WM tests (vSTM: digit span forward and nonword repetition; CE: digit span backward), two standardized grammatical tasks (sentence formation, sentence repetition) and a narrative task used for grammatical analysis (e. g., MLU, rate of embeddings, canonicity) were conducted and are currently analyzed. The aims are (i) to identify significant relations between specific grammatical skills and different WM skills by considering syntactic complexity in all the modalities tested and (ii) to investigate if the same WM skills tested at age 5;6 in this cohort predict grammatical outcomes at age 10. Preliminary results from correlational analyses at age 10 yielded significant correlations between sentence repetition and two of the WM tasks (CE digit span backward and VSTM nonword repetition) while the expressive sentence formation task was only correlated with the CE task. Further results on the relation between children's grammatical and WM skills and its theoretical implications will be discussed.

Typical first language acquisition: morphology, syntax

Wednesday Posters

07/17/2024

Research on Language Development Milestones in Chinese Children Aged 0-5.5 Years

Saishuang Wu; Yunting Zhang; Fan Jiang

Objective: To construct developmental milestones for Chinese children aged 0 to 5.5 years in their language development, providing a reference basis for the development of screening and diagnostic tools for Chinese children's language development. Methods: Based on existing developmental assessment tools and existing literature, a language developmental item pool was established through expert consultations and cognitive interviews. From October 2022 to November 2022, data from a total of 1,976 children aged 0 to 6 years were collected from five provinces (Zhejiang, Sichuan, Liaoning, Jiangxi, Hainan), divided into 13 age groups. Using stratification by urban/rural areas, gender, and age groups. Developmental milestone data were collected through parental reports in both communities (below 36 months of age) and kindergartens (36 months and above). The item response theory model was used to conduct descriptive analysis of language developmental milestone characteristics for different age groups of children and to compare the data between Chinese and English. Results: A total of 63 language developmental milestones were included in the database. After preprocessing, 1,659 children were included in the data analysis, including 827 boys and 832 girls, with an average age of (2.5±1.9) years. The response rates for all language milestones were above 99%, and three items showed item functional differences based on maternal education level, while 14 items exhibited poor model fit. Conclusion: The results showed that most language developmental milestones were able to well describe the language development trajectory of Chinese children. These findings provide valuable guidance for the development of future Chinese children's language development tools, clinical monitoring of language development, and related neural mechanism research.

Assessment tools, their adaptations, including CDI's

07/17/2024

Psychometric properties and gender differences in a lexical task for toddlers aged 19 to 36 months

Allegra Cattani; Dora Bianchi; Emre Celik; Fiorenzo Laghi

"Introduction: The Words in Game Test (WinG; Cattani et al., 2019) is a picture task designed to assess lexical skills in toddlers. This study aims to verify the psychometric properties and gender differences in two WinG aggregated dimensions.

Method: The participants were 336 English-speaking children aged 19 to 36 months (Mage = 28.63 months; SD = 4.78), who completed the WinG Test noun and predicate comprehension scales. Of them, 313 also successfully completed the noun and predicate production scales. The correct responses of children were age-standardized in scores of 3-month intervals, and then aggregate standard scores of noun and predicate comprehension, and noun and predicate production were calculated. A subgroup of 86 children (Mage = 27.76 months; SD = 4.79) performed the Auditory and Expressive tasks of Preschool Language Scale 4 (PLS-4; Zimmerman et al., 2011), which were considered as reference standards for criterium validity. The psychometric properties of the WinG aggregate comprehension and production dimensions were estimated by reliability, predictive validity, and predictive invariance by gender. Gender differences in the dimensions were also computed.

Results: The WinG dimensions obtained excellent reliability (alpha of .93 for Comprehension and of .92 for Production). Predictive validity was confirmed by the significant regression coefficients on PLS-4 Auditory (for Comprehension, beta = .50, p < .001) and Expressive tasks (for Production, beta = .51, p < .001), respectively. Predictive invariance across gender groups was confirmed by the null interaction effects on PLS-4 Auditory (Comprehension*Gender, beta = -.05, p = .95) and PLS-4 Expressive task (Production*Gender, beta =.02, p = .98). Girls significantly outperformed boys in WinG Comprehension, F(1,335) = 14.48, p < .001, and Production scores, F(1,312) = 9.46, p < .001.

Conclusions: Findings supported the psychometric adequacy of the WinG Comprehension and Production dimensions and ascertained the better performance of girls (vs. boys)."

Assessment tools, their adaptations, including CDI's

07/17/2024

The Test of Complex Syntax- Electronic: Norming and Standardization.

Pauline Frizelle; Ana Buckley; Tricia Biancone; Darren Dahly; Paul Fletcher; Dorothy Bishop; Cristina McKean

"Aim: This study aims to obtain developmental norms and standardise the Test of Complex Syntax-Electronic (TECS-E), an online interactive assessment, which includes three types of complex sentences - relative, complement and adverbial clauses. The TECS-E proposes a novel way to assess language by using engaging animations shown on a tablet; is designed to reflect the way sentences are processed in everyday conversation; and can be completed independently from 5 years.

Method: The TECS-E was administered to over 900 English-speaking children, aged between 5;00 and 8;11 years, across the Republic of Ireland. The sample was further refined to 600 (i.e. 100 participants per age-band) to ensure an accurate representation of the Irish population with respect to gender, socio-economic status, and locale (rural versus urban areas). The validity and reliability of TECS-E was also estimated using test-retest, concurrent validity and internal consistency measures.

Results: Scaled scores were obtained for each subtest. Summation of these scaled scores produces the child's total index score, which is norm referenced. Scores increased with age from 5 – 9 years, with those from disadvantaged backgrounds scoring lower than more affluent groups, across all ages. Overall, children performed highest on relative clause constructions, followed by complement clauses, and lastly adverbial clauses. The results indicate strong test-retest reliability, concurrent validity and internal consistency.

Conclusion: The TECS-E is a computerized assessment tool that 1) can be reliably completed independently by children from 5 years; 2) has been norm referenced and standardised on a large and representative Irish population and 3) can be used to identify children's strengths and weaknesses in understanding a range of complex sentences. This study also contributes to our knowledge of typically developing English-speaking children's understanding of complex sentences from 5 – 9 years."

Assessment tools, their adaptations, including CDI's

07/17/2024

The influence of the test administration method on the assessment of children's vocabulary

Monika Janíková; Terézia Horská; Andrej Mentel; Svetlana Kapalková

"The assessment of language skills in preschool children is typically based on the 'pencil-paper' method of administration. With the development of digitalization, new assessment options are emerging (e.g., measuring attention, reaction time, automatic scoring) in addition to the assessing of a child's basic performance in the area.

Electronic media expand assessment possibilities and appear more attractive to children.

Our contribution focuses on comparing two methods of administration (traditional paper-based and electronic) regarding children's performance in evaluating their vocabulary using the Cross-Linguistic Lexical Tasks (LITMUS CLTsk). To assess the equivalence of both administration methods, the frequency distributions of raw scores in all four test components were compared in a sample of N = 89 children (age range 45 – 71 months, Mean = 58.73; SD = 7.69). We compared two groups of children, where age and gender were the controlled variables, as usual. However, we are aware that the family's socioeconomic status and the literacy environment significantly impact a child's language development. Therefore, in our research, we also examined parameters such as the education of both parents and reading habits in the family (e.g., the number of children's books and all books in the household, the duration of shared reading, frequency of reading during the week), collectively labeled as 'cultural capital.' The study results demonstrated that neither the method of administration nor the gender of the tested children affected their performance in the lexical test. Conversely, the ability to produce and comprehend nouns and verbs was significantly associated with age and the level of the family's cultural capital."

Assessment tools, their adaptations, including CDI's

07/17/2024

Reading pseudowords, word and texts by Russian-speaking adolescents in grades 8-11

Aleksandra Cherevik; Svetlana Alexeeva; Iana Nikonova; Alexandra Burdyna; Viktoriia Koltuntseva; Alice Lezina

"The Standardized Assessment of Reading Skills (SARS) is commonly used in the Russian Scientific Tradition to assess reading skills at the text level and dyslexia in Russian elementary schoolchildren. However, worldwide

screening tests for dyslexia often focus on decoding skills at the word level, without considering contextual influences as well. Recently, a word/pseudoword test was developed specifically for Russian-speaking children, assessing decoding skills and the first reading norms were collected for primary schoolchildren. Although, there is a lack of dyslexia screening tests that assess both word and text levels for older Russian schoolchildren.

This project aimed to collect reading fluency and comprehension norms for Russian-speaking adolescents in Grades 8-11. The reading skills of 113 typically developing adolescents were assessed using SARS and the word/pseudoword test. We calculated average reading speed and comprehension scores to identify reference levels that indicate possible reading impairment. In addition, significant correlations were found between reading fluency scores on SARS and the pseudoword and word subtests, although in the latter case it was lower than the one observed in primary schoolchildren.

Therefore, it is recommended to use both SARS and the word/pseudoword test for reading skills assessments and evaluating a missed dyslexia in adolescents. These tests are likely to identify difficulties associated with different components of reading."

Assessment tools, their adaptations, including CDI's

07/17/2024

Language Development Research: A Platinum Open Access Journal

Ben Ambridge

"IASCL2024 marks the three-year anniversary of the launch of Language Development Research, the only journal dedicated to the study of child language that is committed to full platinum open access: i.e., no submission fees or article-processing changes for authors; no subscription fees for readers or libraries.

The first half of the poster sets out the ethos of LDR, which is owned and run entirely by the child language acquisition community, in particular our 30-strong Editorial Board and our team of Action Editors, with free hosting generously provided by info-CHILDES and Carnegie Mellon's Library Publishing Service. Sharing of data, analysis code and experimental materials is mandatory for submitted articles to proceed to peer review (with exemptions available for copyright or confidentiality reasons). A criterion that really sets LDR apart from other journals in the field is our commitment to publish any submitted paper that is deemed by the peer review process to meet our criteria for rigour, without regard to the perceived novelty or importance of the findings (indeed, in addition to Registered Reports, we also offer – where data have already been collected – Results-Redacted review). This commitment is designed to reduce both publication bias and incentives to engage in questionable research practices such as p-hacking and hypothesizing after results are known (HARKing).

The second half of the poster sets out qualitative and quantitative analyses of the first three years of LDR, which has seen the publication of 30 articles (with a further 25 in peer review), in terms of thematic areas covered, acceptance and rejection rates, turnaround times for peer review, proportion of Registered Reports/Results-Redacted review, and conformity with preregistrations and Open Science practices. Where relevant metrics are available, we also compare LDR against other journals in the field."

Assessment tools, their adaptations, including CDI's

07/17/2024

Are Sentence-Repetition Tasks a potential answer to bilingual language assessment?

Saoirse Lally; Natalia Banasik-Jemielniak; Ewa Haman; Stanislava Antonijevic-Elliott

"Background

Over 20% bilingual-speaking children in Irish primary schools are Polish-English bilinguals. Polish is the most spoken heritage language in Ireland. Timely identification of language-disorder (LD) in bilingual children in Ireland is challenging due to the lack of bilingual speech and language therapists (SLTs), assessment tools, resources and time.

Aim

1. Can monolingual SLTs use Sentence-Repetition tasks (SRep) to assess Polish-English bilingual children when working with a Polish language teacher to distinguish between typically-developing (TD) children and those with suspected LD?

Methodology

15 TD-children and 12 children with suspected LD, Polish-English speakers, aged between 5;0 and 8;11 were assessed using an English and a Polish LITMUS SRep. Language history was assessed using a parental language questionnaire. Scoring of the Polish SRep was completed by a monolingual English-speaking SLT and a Polish language-teacher. These scores were compared to scoring by a Polish psycholinguist.

Results

There was a strong agreement between the scoring completed by the SLT and Polish teacher and the Polish psycholinguist with 82% agreement in the TD group and 62% agreement in the LD group. Errors made by participants varied across groups.

Discussion

While observing a high level of agreement between the two scoring teams, larger discrepancies were observed for children with suspected LD. Further analysis indicated that some morphosyntactic errors were scored differently by the two scoring teams. Those errors referred to reduction in the use of morphosyntax that is common in this language community, but can also be a marker of LD.

Conclusion

SRep are a promising tool that could support monolingual SLTs to assess bilingual children's languages to achieve an accurate language profile and make informed diagnosis and management decisions. Further research is required to describe the use of morphosyntax in TD-children from this bilingual population to inform construction of a scoring manual for clinical practice."

Assessment tools, their adaptations, including CDI's

07/17/2024

Pilot validation of the lexical task LITMUS CLTsk at an early age

Terézia Horská; Svetlana Kapalková

The study focuses on the planned validation of the Cross-Linguistic Lexical Tasks (LITMUS CLTsk), which assesses vocabulary in monolingual and bilingual children in the preschool age. The preliminary sample consists of 30 monolingual Slovak-speaking and typically developing children (30 - 36 months with Mn = 33, SD = 2.15). As a method, we used the comparison of two standardized tools - directly assessing children's vocabulary based on LITMUS CLTsk and children's vocabulary assessed by their parents based on the short Slovak version of the screening inventory TEKOS II (standardized Slovak version of MacArthur-Bates CDI). The monitored indicators of objectivity of the lexical test gained concurrent validity, within which parents filled out a form about the vocabulary of their children on the same day as the children undertook the test. The results of the study on a pilot sample showed that children's performance in production and comprehension of vocabulary assessed by the lexical test LITMUS CLTsk correlated with the children's performance in the area of word comprehension (p = .398) and production (p = .444) in the short version of TEKOS II, even though older children reached ceiling values in the questionnaire (word comprehension (Mn = 78.2, SD = 3.57); word production (Mn = 70.4, SD = 10.93). The lexical test appears to be a valid and reliable tool (the same children were tested twice within the span of 14 days) for measuring lexical competence at an early age.

Assessment tools, their adaptations, including CDI's

07/17/2024

Parental language mixing and language outcomes of children with (a suspicion of) DLD

Merel van Witteloostuijn; Elise de Bree; Elma Blom

"Children who grow up multilingually will naturally encounter language mixing in their environment. Since we know that children's language development depends on the quantity and quality of their language input (Anderson et al., 2021), and processing mixed-language input may be more cognitively demanding than processing single-language input (Morini & Newman, 2019), the frequency with which parents and/or caregivers mix their languages may impact on the language development of their children. This matter is also highly relevant for children with developmental language disorder (DLD), for whom attention to language input is essential. Yet very little is known about language mixing in the input of these children, and the potential consequences for their language development. Although studies of children with typical development suggest that the effect may be small (Bail et al., 2015), the effect could be amplified in children with DLD because of their problems with language uptake/processing (Jackson et al., 2021).

We investigate parental language mixing and its relationship with language outcomes in three- to six-year-old multilingual children with (a suspicion of) DLD in the Netherlands. Parental language mixing is measured through a parental questionnaire (Q-BEx; De Cat et al., 2022) and the LENA™ recording device that is used to make day-long audio recordings in the home environment. We distinguish between the type (between or within speakers) and direction (Dutch to other language or vice versa) of language mixing by parents and explore relationships with children's receptive and productive vocabulary and grammatical abilities in Dutch. The ongoing data collection (current n = 24; aimed n = 30) will be completed in the fall of 2023. The preregistered analyses (https://osf.io/tnw3u/) will be conducted in the winter of 2023. The findings will be informative both for language development theory as well as for professionals supporting multilingual families on language use at home."

Bi-/multilingual acquisition in DLD and developmental conditions

07/17/2024

Production of prosodic focus in Cantonese-English bilingual autistic children

Emily Haoyan Ge; Albert Lee; Hoi Kwan Yuen; Fang Liu; Virginia Yip

"It is widely acknowledged that bilingualism shapes language development in typically developing (TD) children. However, it has not been systematically examined in autistic children, whose language development is generally impaired and delayed. Considering the existing language difficulties in autistic children, parents and professionals often wonder whether exposure to more than one language exacerbates the impairments.

This study investigated the effects of bilingual exposure on the production of Cantonese prosodic focus by 5- to 9-year-old Cantonese-English bilingual autistic children compared to their bilingual TD peers matched in nonverbal IQ, working memory, receptive vocabulary, and maternal education. Focus is a key concept of information structure, signifying new or contrastive information. The production of prosodic focus is not easy for autistic children, considering atypicality in prosody production is one of the most commonly reported social-communication features of autism spectrum disorder. Forty-two bilingual autistic children and 56 bilingual TD children participated in a picture elicitation task. All children were born in Hong Kong and acquired Cantonese as their first language and English as their second language before age three. Information on children's language exposure and use was collected through a parental report. Children's production of focus was first audio-recorded and then analysed by Praat.

Our acoustic results revealed significant group differences between autistic children and their TD peers in terms of intensity and duration. However, no differences were observed between the two groups regarding fundamental frequency (f0) and the f0 range. Our statistical analysis further showed that bilingual exposure did not relate to the acoustic features of prosodic focus in bilingual autistic children. The overall findings indicate that bilingual exposure has no detrimental effect on prosodic focus production in bilingual autistic children's first language. Our study will provide essential guidance to parents and professionals to make better-informed decisions for autistic children in bilingual communities."

Bi-/multilingual acquisition in DLD and developmental conditions

07/17/2024

Using linguistic relativity measures to assess cognition in Yucatec Maya-Spanish bilingual children

Jaime Chi Pech

The present paper uses linguistic relativity effects to study the thinking patterns of Yucatec Maya-Spanish bilingual children in the Yucatan peninsula. The research involved twelve Yucatec Maya-Spanish bilingual children aged 9 to 11 years old. The study assessed the cognitive effect of bilingualism in the domains of number marking and spatial frames of reference. It sought to determine whether relativity effects stemmed more from structural and/or usage-based differences between languages, and to what extent these effects were influenced by three factors: 1) language status; 2) social community; and 3) language of assessment ("language mode"). The study had two important findings. First, for both number marking and spatial frames of reference, all children provided responses more like Yucatec Maya monolingual speakers than like Spanish monolinguals. Second, both assessments revealed differences across the three factors. In the domain of number marking, there was an effect of the language of assessment, but not of social community or language status. In the case of spatial frames of reference, there were effects of social community and language status, but not of the language of assessment. Overall, bilinguals demonstrated cognitive flexibility in their sensitivity to the language of assessment. This study offers a positive outlook for the future of the Yucatec Maya language in the Yucatan peninsula. The Yucatec Maya cognitive habits may continue for some time despite the rapid shift from Yucatec

Maya monolingualism to bilingualism. Bilingual individuals have the ability to adapt in different contexts, embodying two distinct ways of thinking about reality.

Bi-/multilingual acquisition in typically developing children

07/17/2024

Minority Language Exposure Predicts Bilingual Performance in Catalan-Spanish Children

Adriana Soto-Corominas

"Catalan, as a regional minority language in Catalonia (Spain) in contact with Spanish, is a non-migratory heritage language subject to protective language policies and is the language of schooling.

Catalan-Spanish bilingual children (N=162) completed receptive vocabulary and grammar tests in the two languages at the beginning of Grade 1 (Time 1; T1) and at the end of Grade 2 (T2). Parents completed a questionnaire that yielded information on participant/family demographics and their linguistic environment. We asked: 1-What bilingual profiles are present in the data at T1 of testing? 2-What are the best predictors of these profiles? 3-Do T1 profiles predict participant performance at T2?

To answer Q1, we employed k-means clustering, which found two profiles: one that performed overall highly in the two languages (high-performing) and one that performed comparatively low (low-performing). To address Q2, we ran a logistic regression predicting the profiles. The predictors that contributed most to the model were language use at home and at school, and frequency of Catalan in reading activities. Specifically, participants who read less frequently in Catalan and were in households and classrooms where Spanish is the most common language were more likely to be classified in the low-performing cluster. To address Q3, we ran t-tests comparing cluster performance in the four Catalan and Spanish tests at T2. In all tests, the high-performing cluster had significantly higher scores.

Three findings derived from these results: (1)-When it comes to receptive abilities in Catalan and Spanish, languages do not take away from each other. Higher abilities in one language are related to higher abilities in the other language. (2)-Engaging more frequently with the minority language at school and outside may confer advantages not only in Catalan but in Spanish as well. (3)-Early differences in receptive abilities may persist despite increased exposure to Catalan at school."

Bi-/multilingual acquisition in typically developing children

07/17/2024

Bilingualism and language dominance in the predictive processing of bilingual Spanish and Catalan

AURORA BEL; RUT BENITO

"This study examines bidirectionally the effects of bilingualism and language dominance on the morphosyntactic processing of DOM (Differential Object Marking) in young Catalan-Spanish bilinguals. Crucially, Spanish marks all animate objects (Veo a la mujer 'I see the woman'), whereas standard Catalan does not (Veig la dona); both Spanish and Catalan do not mark inanimate objects. We ask ourselves whether bilinguals with different degrees of dominance use DOM as an anticipatory cue for direct objects.

Three groups of young bilinguals (N=77; mean age=21y.o.) with different dominance profiles (based on the BLP, Bilingual Language Profile) performed a Visual World Paradigm eye-tracking task (one in Spanish, one in Catalan). Participants heard transitive sentences (Los camareros ensucian {a la misma clienta/la misma cazuela} con aceite en el restaurant, 'The waiters dirty {DOM the same client/the same casserole} with oil in the restaurant') while looking at two words (target and competitor) on the screen. The task had 2 conditions: animacy of the object ([+animate, +DOM], [-animate, -DOM]) and animacy of screen words (different or same animacy).

GAMMS on the proportion of fixations in the region of interest revealed that in Spanish when there is DOM Spanish-dominants anticipate the inanimate object, whereas Catalan-dominants anticipate the animate one. In Catalan, when there is DOM Catalan-dominants do not anticipate any object, whereas Spanish-dominants anticipate the animate one. Balanced bilinguals do not show clear patterns in none of their languages in this context. When there is no DOM, the three groups anticipate the inanimate objects in both languages. We discuss that DOM is an anticipatory cue for [+animate] objects but, interestingly, in the non-dominant language. Another interesting but a bit surprising finding is that inanimate objects received more looks; since objects are usually themes and inanimate, we suggest that animacy modulates predictive processing."

Bilingual Children's Consolidation of Novel Words Within- and Between-Languages

Margarethe McDonald; Caitlyn Slawny; Margarita Kaushanskaya

Children consolidate new words into existing phonological networks and this consolidation requires time and sleep; however, little is known about how bilingual children consolidate new words. In this study, we investigated within- and between-language consolidation in bilingual children, testing whether newly-learned novel English words would be consolidated within their English and Spanish phonological networks. We tested consolidation by examining how English-like novel words and familiar English and Spanish words co-activate each other. Twenty-eight Spanish-English children between ages 4 and 5 (M=5.05, SD=0.46) learned six English-like novel words. Phonological consolidation was tested using a visual world paradigm task immediately after learning and after a 24-hour delay. At test, four images were presented: two images represented familiar words and two images represented novel words. For within-language trials, the auditory target was a familiar word that shared phonological onset with a novel English competitor on the screen (e.g., lightbulb - lipe). For between-language trials, the novel competitor shared phonological onset with the auditory target in Spanish (e.g., – lapiz [pencil] - lipe). Generalized Additive Mixed Models (GAMMs) were run to compare the time-course of eye-movements to the competitor and matched unrelated images. Bilingual children demonstrated significant co-activation of phonological competitors in English (within-language) immediately after teaching (F = 3.42, p = .002) and marginal co-activation a day later (F = 6.77, p = .06). Although co-activation was not as strong on day two, it appeared significantly earlier than on day one (F = 2.43, p = .03). Children did not show any indication of co-activation of Spanish (between-language) on day one (F = 0.36, p = .68) or day two (F = 1.22, p = .29). These results suggest in bilinguals, phonological consolidation is language-specific, such that newly learned novel words compete with lexical neighbors within the same language, but not between languages.

Written narrative development: Associations between micro- and macrostructure in school children

Freideriki Tselekidou; Alyona Sternharz; Natalia Gagarina

"This longitudinal study uses a novel theoretical approach to explain the developmental trajectories of picture-based written narratives in school-aged children, by distinguishing macrostructure in two components, Story Structure (SS) and Story Complexity (SC). SS is the number of story grammar elements produced, the story's "quantity", whilst SC assesses the co-occurrence of the core elements (Goal-Attempt-Outcome) of an episode, the story's "quality". With this framework, the study aims (a) at tracing the macrostructure development and (b) at scrutinizing the relationship between macrostructure (the higher order organization of a text) and microstructure (the language-specific lexical and syntactic units) in monolingual and bilingual children of Grades 2 and 3, by considering Age of Bilingualism (AoB).

Method. 142 narrative texts (38 monolingual German and 103 age-matched L2 German) were elicited via Multilingual Assessment Instrument for Narratives (MAIN) in Grade 2 (Mean Age=8;10) and 3 (Mean Age=9;2). Macrostructure was operationalized as SS and SC. Microstructure included lexical productivity (Number of Different Words, NDW) and syntax (Mean Length Clause, MLC) level.

Findings. Generalized linear mixed-effects models revealed significant development of macrostructure from Grade 2 to 3 in both monolinguals and bilinguals in SS (p<.05 and p<.001, respectively) and SC (p<.001 for both groups). Regarding micro- and macrostructure relationships, SS and SC were significantly associated with NDW in Grades 2 and 3 (p<.001 for both groups and macrostructure components). SC and NDW were more strongly associated in monolinguals' Grade 3 (p<.001). MLC was not associated with either SS or SC in any of the two groups. AoB did not play any role in bilingual narrative development.

Discussion. Findings add to the scarce evidence on the written narratives development and suggest that macrostructure develops crucially in primary school. Furthermore, they highlight the critical role of lexical productivity in shaping narrative skills in monolingual and bilingual school-aged children."

Lexical development in monolingual, bilingual and trilingual Lebanese preschool children

Camille Moitel Messarra; Christelle Khoury Aouad Saliby; Christophe Dos Santos; Edith Kouba Hreich; Nour Chami; Sophie Kern

"In preschool monolingual or plurilingual children, significant quantitative variations within their vocabulary have been demonstrated (Fenson et al., 1993; Coté et al., 2022). These variations have been linked to various endogenous (such as gender, cognitive development) and exogenous (such as language status, socioeconomic status, language exposure...) factors in the child, which carry different weight depending on age and whether the language aspect is expressive or receptive. For instance, gender has a more pronounced effect on productive vocabulary size in children under the age of 3 (Kern & Gayraud, 2010).

Our study aims to elucidate the receptive and expressive lexical development in two groups of Lebanese children aged between 8 and 16 months (n=184), and 16 and 30 months (n=181). Parents were asked to complete two questionnaires: the PaBiQ-IT (Parental Bilingual Questionnaire-Infants and Toddlers), which provides some information about language exposure, and the IDC-L 8-16 and 16-30, which are Lebanese trilingual adaptations of the respective M-CDI versions (Fenson et al., 1993) developed by Messarra et al. This trilingual questionnaire assesses Lebanese Arabic, French and English with a set of words that are translation equivalents. The scores used for comprehension and production are the total vocabulary score and the conceptual score. With these measures, we examined the influence of gender, socioeconomic status (SES), childcare arrangement, and language status (monolingual, bilingual, and trilingual) on the size of receptive and expressive vocabulary. A difference for gender and for language status was found for the 8-16 group but not for the 16-30 group. Girls and multilingual children had larger vocabularies than their peers. No difference was found for SES. An effect of childcare arrangement was found for production. Lebanese children in daycare have a larger productive vocabulary than their peers not in daycare. However, for the 8-16 group, age may be a confounding factor."

Bi-/multilingual acquisition in typically developing children

07/17/2024

Identifying Language Profiles in Spanish-English Dual Language Learners

Linye Jing; Julie Smith; Carol Hammer

"The number of dual language learners (DLLs) in the United States is growing. As these young children develop skills in two languages, they typically demonstrate differing skills in the various language domains. When DLLs enter English-speaking academic settings, their skills are affected due to changes in their language exposure in school. Narrative analysis is a versatile tool to study DLLs' dual language skills because it is appropriate to use with different ages and can tap into multiple domains of DLLs' languages. The current study aims to identify variability in vocabulary, syntax and the overall quality of dual-language narratives produced by Spanish-English DLL preschoolers across two languages. The study also investigates the degree of changes in these DLLs' languages from fall to spring during a school year.

Participants included 117 four-year-old, Spanish-English DLL preschoolers. Narratives were elicited in English and Spanish in the fall and spring. The narratives were transcribed and coded in SALT (v. 20). Variables of interest were number of total words (NTW), mean length of utterance in words (MLUw), moving window type-token ratio (MATTR), and subordination index (SI). Additionally, the quality of their narratives was determined using the narrative scoring scheme (NSS).

Analyses are underway. Paired-samples t-tests showed that children's productivity in English and Spanish (NTW and MLUw), syntactic complexity (SI) and overall narrative quality (NSS) increased from fall to spring. However, their lexical diversity (MATTR) remained the same in both languages. We will conduct two latent profile analyses for the fall and spring timepoints using children's Spanish and English narrative measures to identify profiles of bilingual narrative skills among these children. We will also perform a latent transition analysis to investigate how children's narrative profiles changed over time. Understanding the variability and the changes in DLLs' language skills will inform better educational support for DLLs entering schools."

Bi-/multilingual acquisition in typically developing children

07/17/2024

L2 child acquisition of German strong verb inflection – evidence for an implicational pattern

Anja Binanzer; Verena Wecker

"German verb inflection is often divided into weak and strong subclasses. Several studies report acquisition delays of strong verb morphology and overgeneralization of weak inflection up to primary school age (Elsen 1998, Szagun 2011, Wonner 2015). These findings are explained by the facts that a) strong verb inflection is highly irregular and b) that not all paradigm positions of strong verbs show strong features, so that learners have to acquire strong verb forms for each paradigm position separately.

Bittner (1996) demonstrates that the occurrence of strong features in German verb inflection is not arbitrary but can be predicted by the following implicational pattern: imperative < present tense < preterite < subjunctive < past participle. If a verb shows a strong feature in one paradigm position, the verb will also have strong features in the paradigm positions to the right side of the scale, but not in the paradigm positions to the left. This implicational pattern was shown to play a role for adult L1 speakers in mastering a strong nonce-verb test (Bittner & Köpcke 2007), while its impact on child language acquisition was not studied yet.

Hence, our study explores the strong inflection paradigm development in L2 child acquisition. We analyzed verb forms in written narratives (N=167) that were elicited with pictures in a school context from early second language learners (N=109) with various L1s (N=14) aged 7 to 12.

Results show that the children overgeneralized the weak inflectional pattern to 29 % of all strongly inflecting main verbs in the present tense, 20 % in the preterite and only 1 % in the past participle. These results are consistent with former studies in that weak verb inflection is overgeneralized, but show further that the strong inflection paradigm is acquired gradually according to Bittner's implicational pattern."

Bi-/multilingual acquisition in typically developing children

07/17/2024

Educational context and bilingual learners' narrative skills

Chan Lu; Xuening Zhang; Laura Guo; Amy Pace; Ziyin Mai

Narrative production provides a rich context to evaluate multiple components of children's expressive language. For children learning multiple languages, bilingual narratives facilitate cross-linguistic comparison and provide a context for investigating skill development and potential transfer between story elements (Hao et al. 2019). Narrative skills are primarily investigated through macro- and microstructure to understand children's ability in global story organization and ability to produce linguistic features at the utterance level (Karasinski 2022). Developmental patterns in macro- and microstructure are often highly variable in bilingual populations depending on specific characteristics of exposure and use in each language, and children's unique learning contexts at home and school (Pace et al., Under review). What remains unclear is how learning contexts affect the development of their narrative skills development and their cross-linguistic relationships.To explore this question, the study elicited oral narratives using wordless Frog Stories in Mandarin and English from two groups of age-comparable children who are becoming bilingual under distinctly different conditions: heritage language learners studying English through regularly schooling while receiving Mandarin input mainly at home and weekly extra-curricular classes (UK, N = 27, Mage = 7.8yrs, range = 5-14yrs), and learners in a dual language immersion program who receive formal education in both languages (USA, N = 60, Mage =8.95yrs, range = 6-12yrs) with English being the primary home language. Variability in macrostructure and microstructure production by language and context, within-language associations and cross-language transfer, were examined. Within each language, microstructure skills were correlated with macrostructure skills. Evidence for development of shared skills across languages and language-specific patterns of narrative skills was also identified. Educational contexts shaped how micro- and macrostructure skills transfer across languages. Results highlight the varied development patterns of learner languages under different education contexts, and the importance of measuring outcomes in both the societal and the non-societal language.

Bi-/multilingual acquisition in typically developing children

07/17/2024

Bilingual Children Demonstrate Connection and Variation Within Shared Narrative Macrostructure

Alejandro Granados Vargas; Elizabeth Peña; Lisa Bedore

"Aims: We investigate the relationship between narrative macrostructure, current language exposure, and microstructure in second-grade Spanish-English bilingual children in the United States. Macrostructure knowledge has been claimed to be shared across languages in multilingual individuals. We examine the role of current language exposure and microstructure on macrostructure and how individual children organize their

stories in English and Spanish. We use Sociocultural Theory to investigate differences in the macrostructural elements children choose to include in their stories by language.

Methodology: Using existing data, we investigated to what extent current language exposure and microstructure (i.e. number of different words) influenced the macrostructure (Internal State Terms, Story Structure, Story Complexity) of 62 Spanish-English bilingual second graders' stories. A linear regression analysis was used to examine the relationship between language exposure, microstructure, and macrostructure. A two-sample t-test was used to compare average macrostructural performance in English and Spanish. A correlational analysis was used to compare narrative performance in both languages at the individual level.

Results: No statistically significant relationship was found between current language exposure and macrostructure, except for Spanish story structure. A significant relationship was found within languages for microstructure and macrostructure and across languages between Spanish microstructure and English Internal State Terms. The participants in this study demonstrated comparable use of overall macrostructure across languages, in addition to variation in what macrostructure subcomponents they use by language of story elicitation. Correlational analysis revealed a significant relationship between macrostructure performance in English and Spanish at the individual level.

Discussion: Findings are consistent with extant literature that claims macrostructure is shared across languages. Children require lexical diversity across languages to express their ideas organized within macrostructural elements. Although bilingual children tell comparably complex stories, they may be making culturally and linguistically specific decisions about what macrostructure components to include in their stories."

Bi-/multilingual acquisition in typically developing children

07/17/2024

Bilingual Phonological Representation through a Translanguaging Lens

Leah C. Fabiano; Brandon Garivaldo

The Dual-Systems Hypothesis is a theoretical framework that aims to describe the structure of bilingual speech and language representation as two separate, differentiated systems with points of between-language interaction (Paradis and Gensee, 1996). Though initially described using evidence from morphosyntax, this framework was adapted and used in later work to describe the structure of the bilingual phonological system (Fabiano-Smith and Goldstein, 2010; Paradis, 2001). However, the emergence of translanguaging (Otheguy, García, & Reid, 2015) shifted our understanding of bilingual phonological development. First defined by the field of education, translanguaging is a pedagogical approach that liberates the languaging practices of multilingual communicators by emphasizing the idiolect, or one's own collection of linguistic features, unbound by named languages. The purpose of this study was to develop a theoretical model, using translanguaging as a lens, to deepen our understanding of bilingual phonological representation. Forty bilingual, Latinx Spanish-English speaking children ages 3;0-6;0 were recorded on a single word protocol in both of their languages. Samples were transcribed using IPA via the Logical International Phonetics Program (LIPP). Substitution error analyses were performed to identify the type and frequency of both error targets and substitutes. Connections among groups of sounds yielded two schematics, indicating sounds likely to share representations within the idiolects of bilingual children. Results revealed patterns in bilingual speech sound development that were better captured using the multidimensional translanguaging lens and suggested implications for clinical evaluation and diagnosis of speech sound disorders in bilingual children with developing phonology.

Bi-/multilingual acquisition in typically developing children

07/17/2024

Visual Processing of Indoor Scenes in Children with Developmental Language Disorder

Daniela Bahn; Dilara Türk; Melissa Le-Hoa Võ; Christina Kauschke

Through multinational and multidisciplinary efforts, there has been a significant shift in the clinical understanding of Language Disorders over the last years. In this regard, the definition and diagnostic criteria for Developmental Language Disorder (DLD), previously known as Specific Language Impairment, have been comprehensively revised. Problems in neurocognitive, sensorimotor, or behavioral domains often co-occur with DLD, while their causal relation to it is unclear. While DLD research focused largely on certain co-occurring conditions (e.g., social behavioral problems, subtle motor problems, limitations in executive functions), another nonverbal domain, i.e., visual cognition, has remained largely unaddressed. However, in the course of development, children also acquire visuospatial regularities to build expectations about their environment and to

navigate their surroundings. For example, children learn that certain objects are typically found in specific locations and hierarchical relations to each other, such as a soap appearing in a bathroom on top of the sink. So-called "scene grammar" approaches assume that the processing of spatial hierarchies and the acquisition of semantic and syntactic structures in language might share common underlying cognitive mechanisms. In line with this, there is initial evidence indicating reduced sensitivity to visual object-scene-inconsistencies in preschool children with DLD. Our study aimed to investigate whether primary-school-aged children with typical language development and those with DLD (20 age- and gender-matched pairs) differ in their processing of everyday indoor scenes. We assessed visuospatial knowledge (a) implicitly by analyzing eye gaze recordings on object-scene inconsistencies and (b) explicitly through a behavioral task, where participants were asked to place objects in a dollhouse. Task performance was correlated with comprehensive measures of children's language, visual, and cognitive skills. First results point to clear relations between language and visuo-cognitive task performances suggesting that strong language skills and enhanced effectiveness of object scene processing go hand in hand.

Developmental language disorders (DLD), SLI

07/17/2024

May learning and social-behavioral difficulties be signs of undiagnosed language disorders?

Bence Kas; Alexandra Rohár; Klára Marton

"Developmental language disorder (DLD) may lead to challenges in verbal learning, reading, social interactions, and behavioral adaptation (e.g., Cohen et al., 1993; Tomblin et al., 2000; Snowling et al., 2000, 2006). These difficulties may become particularly pronounced when language impairments go unnoticed for an extended period of time, resulting in significant learning and communication deficits during a child's school years (Conti-Ramsden et al., 2006; McGregor, 2020). The primary aim of the current study was to assess the prevalence of unknown or undiagnosed language disorders among school-age children in the Hungarian education system who are identified with social, learning, and behavioral difficulties (SLBD). We evaluated the spoken language abilities of 100 students with SLBD between the ages of 7 and 12 with a standardized comprehensive spoken language test (Lukács & Kas, 2023).

Our findings indicate that, as a group, children with social, learning and behavioral difficulties consistently performed significantly below typically developing children in all domains of spoken language including receptive and expressive vocabulary, lexical access, phonological short-term memory, morphosyntactic processing and sentence formation. While some task results may be associated with low socioeconomic status (e.g., vocabulary) or language differences, such as emerging bilingualism (e.g., sentence creation), others may indicate the presence of DLD (e.g., nonword repetition, sentence repetition). Our individual-differences approach in data analysis revealed that a substantial number of students in the SLBD group met the criteria for language disorder but had not received a formal diagnosis before.

Based on these results, we discuss recommendations for improving the recognition and support of children with DLD. Key factors for enhancement include increasing awareness of DLD among professionals and parents, implementing preventive screening in early childhood, introducing norm-based language tests in educational assessment protocols, and providing services that focus on oral language development for school-age children."

Developmental language disorders (DLD), SLI

07/17/2024

Multimodal speech perception of incongruent audiovisual words in bilingual children with DLD

Laura Ferinu Sanz; Nadia Ahufinger; Ernesto Guerra; Josué Garcia Arch; Elizabeth Gilboy Rubio; Mònica Sanz-Torrent; Llorenç Andreu

"Background: Children with developmental language disorder (DLD) have difficulties during the audiovisual (AV) speech integration process, which can impact their ability to understand and produce speech. We examined whether children with DLD, during the recognition of words presented with an incongruent sound and articulation, differed from children with typical development (TD) and had different selective attention to the eyes and mouth of a talker. We hypothesized that children with DLD would recognize fewer words and would tend to look less at the mouth and eyes of the talker's face in comparison to their TD peers, as a result of struggling to combine auditory and visual information.

Method: Two groups of bilingual Catalan-Spanish children were tested: (1) 37 children with DLD (Mean age: 8.96) and (2) 37 age/sex matched children with typical development (Mean age: 8.90). We recorded children's

eye movements (eye tracker) as they looked into the face of a speaking interlocutor. During the task, the talker's face was articulating a word matched simultaneously with a different word heard (combining minimal pairs). Afterward, children were asked to choose the word perceived among four drawings.

Results: Children with DLD showed less answer accuracy and were more influenced by the distractor in comparison to the TD group. Their selective attention was allocated significantly less to the mouth and the eyes of the talker's face in comparison to the control group.

Conclusion: Our results suggest that the enhancement of the AV aspect of speech has to be taken into account because children with DLD seem less sensitive to and take less advantage of AV speech cues than children with TD."

Developmental language disorders (DLD), SLI

07/17/2024

Examining the child-factors driving individual differences in language development trajectories

Hann Grimes; Cristina McKean

"Children's language trajectories are heterogeneous and experimental studies have suggested numerous potential child factors which drive these individual differences. Existing large-scale, longitudinal studies have examined a range of biological and social/environmental factors predicting persisting difficulties, and improving and declining language abilities. However, these predictors (e.g., family history, social disadvantage) explain only a small proportion of variance, so exactly what is driving individual differences in children's language trajectories is currently unknown. Child linguistic and non-linguistic characteristics have less often been included in epidemiological studies. Instead, small scale studies have identified that early individual differences in linguistic symptomatology, cognitive, and/or socio-cognitive factors may predict language trajectories. While often motivated by specific explanatory theories of language disorders, such studies have small and unrepresentative samples, limited follow-up, and restricted measures, and are yet to be substantiated using more robust methods.

To evaluate how linguistic, cognitive, and social-cognitive factors may predict individual differences in language trajectories, detailed data is required. It must have repeated detailed measurement of language, cognitive, and socio-cognitive factors within a large representative sample, start early in communicative development, and include potential confounding variables allowing for statistical adjustment. This study uses data from a specialist language longitudinal community cohort (the Early Language in Victoria Study). Data from 1911 children will be analysed using growth modelling methods, whilst adjusting for potential confounds. Using linguistic, cognitive, and social-cognitive variables from between 8 months and 4 years, analyses will identify which are predictive of individual differences in language development from 4-11 years.

Results from this study will deliver findings relevant to the early identification of developmental language disorder and aims to inform targeting and design of services to support robust language development for all children."

Developmental language disorders (DLD), SLI

07/17/2024

Combining genetic and early life parent-reported predictors of 11-year language: A two-cohort study

Loretta Gasparini; Daisy Shepherd; Katherine Lange; Jing Wang; Ellen Verhoef; Edith Bavin; Sheena Reilly; Beate St. Pourcain; Melissa Wake; Angela Morgan

"Background: Rapid population-level identification of language disorders could help target needed care to very young children (while reducing unnecessary services) to improve communication and quality of life outcomes. Two previous machine learning studies drew on the Early Language in Victoria Study (ELVS) and Longitudinal Study of Australian Children (LSAC) respectively to identify and replicate six parent-reported items that best predicted 11-year language outcome with ≥71% sensitivity and specificity. This study combines data from these two cohorts and adds polygenic scores of 24-38-month vocabulary to the predictor set. We are assessing whether predictive accuracy of 11-year language outcome improves when adding polygenic scores to a set of parent-reported behavioral predictors.

Method: ELVS and LSAC are population-based cohorts that were recruited in the early 2000s. ELVS recruited 1910 8-month-olds in metropolitan Melbourne, Australia, and LSAC 5107 0-1-year-olds across Australia. Both cohorts collected the six identified parent-reported predictors between 2-3 years of age, plus had genome-wide

genotyping data available. We are deriving polygenic scores of 24-38-month vocabulary based on genome-wide association study summary statistics from the Early Genetics and Life Course Epidemiology (EAGLE) Consortium. At 11 years each cohort collected a comparable language outcome: ELVS administered the Clinical Evaluation of Language Fundamentals 4th Edition (CELF-4) (n=839) and LSAC the CELF-4 Recalling Sentences subtest (n=1441). We are using SuperLearner, an ensemble machine-learning approach, to estimate the accuracy of the six survey items plus polygenic scores in predicting low 11-year language outcome (>1.5SD below the mean).

Expected results: The data are currently being analyzed. At the conference we will present the predictive accuracy of the six survey items combined with the polygenic scores. If predictive accuracy improves substantially when adding polygenic scores to the set of parent-reported predictors, this could justify future studies collecting genetic data to help predict language outcomes."

Developmental language disorders (DLD), SLI

07/17/2024

Procedural & quality fidelity in a pre-literacy intervention for communication disordered children

Kate Short; Evelyn Nikas; Lynette Teo; Jennie Cusiter; Natalie Munro

"Fidelity to an intervention is important to ensure participants receive intervention as intended. Procedural fidelity is the degree of adherence to prescribed intervention procedures and quality fidelity is the methods used to deliver the treatment. Tools to manage fidelity can include clinician training and scripting. However, too much fidelity control may limit clinicians responsiveness to client needs and risk intervention effectiveness. This study explored the procedural and quality fidelity, and possible fidelity confounders in the 'Launch to School' (L2S) pre-literacy program, for pre-schooler's with communication disorders.

Participants were 20 clinicians who administered 376 L2S treatment sessions. Fidelity was supported through: manualised session plans, a training day, considered pairing of clinicians, visual supports, and book reading scripts. To determine a procedural fidelity score, 22% (n=81) of sessions were video recorded and rated against a fidelity checklist. Five potentially influencing factors (group intensity, size, and severity, clinician pairing and session) were explored through ANOVA. Quality fidelity of clinicians therapeutic talk was evaluated in a random selection of scripted book reads (6%, n=24). These were transcribed, coded, script adherence determined, and the type and frequency of trained therapeutic techniques used by clinicians were established.

The mean procedural fidelity score of 81% (SD 0.074) was influenced by disorder severity (p = 0.04) and session (p = 0.001). Mean book reading script adherence was 78.46% (SD 14.3). Only 22% of clinician talk was scripted, the unscripted remainder featured all trained therapeutic techniques, with focused stimulation (34%), modelling (13%) and recasting (10%) the most frequent.

The L2S program had high procedural and quality fidelity. Clinicians were adherent to session plans and scripts and used all trained therapy techniques with high frequency. The wide variance in book reading script adherence was potentially related to clinician's accommodation to individual client needs– an essential part of intervention."

Developmental language disorders (DLD), SLI

07/17/2024

Word properties as a window to language processing profiles of Late Talkers

Vânia de Aguiar

"Background: Vocabulary knowledge is typically evaluated by measuring children's vocabulary size. However, vocabulary size at an early age has poor validity for predicting later language disorder, and does not provide information about the processing nature of the language difficulties. In the present study, we asked if the psycholinguistic properties of words produced during spontaneous speech can identify early language processing differences between late talkers (LTs) and typically developing (TD) children.

Method: Data from 66 TD children and 51 LTs was gathered from the Ellis Weismer et al. (2013)'s corpus via CHILDES. LTs were identified based on reduced vocabulary size, using the MacArthur-Bates Communicative Development Inventory. Children's spontaneous speech was recorded at 30 months, during play-based interactions. All lexical verbs and nouns produced by a given child were extracted from the sample. Each word was coded for its psycholinguistic word properties (frequency, age of acquisition - AoA, imageability,

concreteness, number of phonemes, and phonological neighborhood). Mean length of utterance (MLU) and lexical diversity measures (TTR, D) were also calculated for each child.

Results: Group-wise comparisons revealed that LTs produced words significantly lower in AoA, shorter in length in phonemes, and higher in imageability and concreteness in comparison to TD children. Individual case-control group comparisons showed great heterogeneity in the individual patterns of language processing strengths and weaknesses (e.g., word imageability was significantly high in 18 LTs and significantly low in 3 LTs).

Conclusion: Psycholinguistic variables revealed that differences between LTs and TD children are not only quantitative, but also qualitative. LTs tend to produce vocabulary that is easier both in terms of lexical and semantic processing, as well as phonological short-term memory. Patterns of strengths and weaknesses vary substantially between children. Future analyses will explore the concurrent and predictive validity of this approach."

Developmental language disorders (DLD), SLI

07/17/2024

Parental and Self-Perceptions of Social-Emotional and Behavioral Skills in Children with DLD

Katharina Kuhlmann; Ulla Licandro

"During childhood, language and behavioral skills develop concurrently through social interactions. Children with developmental language disorder (DLD) are at risk for social-emotional, and behavioral problems (Lindsay et al. 2007; Yew & O'Kearney, 2013), which may persist throughout adolescence (Snowling et al., 2006). However, there is limited data to explore the language-behavior relationship in children with DLD, with most studies relying on external assessments and neglecting self-reports.

The current study investigated both, parental and self-reports on social-emotional and behavioral skills in children with DLD. A total of 101 parents of children with DLD completed the Parent Rating Scales (PRS) of the BASC-3 (Reynolds & Kamphaus, 2020) to assess their children's social-emotional development. Their children (Mage = 7;4 years, SD = 1;3, 69 % male, 26 % bilingual) completed a battery of standardized language tests as well as a nonverbal measure of intelligence. Additionally, a subset of 30 children (Mage = 9;2, SD = 0;1, 67 % male, 23 % bilingual) completed the Self-Report of Personality (SRP; Reynolds & Kamphaus, 2020).

PRS mean scores in the areas of functional communication, developmental social disorders, and functional limitations were at-risk for the group as a whole. Furthermore, adaptive skills and behavioral symptoms emerged as at-risk or clinically significant in 49.5 % and 40.6 % of cases, respectively. Parent ratings also revealed risk factors in the areas of atypicality (40.6 %), attention problems (38.6 %), and withdrawal (36.6 %). SRP results revealed that 30 % of the children reported difficulties in the area of school problems and functional limitations.

In conclusion, there is a considerable variety of social-emotional and behavioral problems reported by both, parents and children with DLD. However, many group findings do not exceed the threshold for social-emotional and behavioral problems. Pedagogical and clinical consequences will be discussed."

Developmental language disorders (DLD), SLI

07/17/2024

Understanding the Connection between Developmental Language Disorders and Behavior Disorders

Jason Chow

"The purpose of this session is to (1) provide an overview of the literature on the comorbidity and co-development of language and behavioral disorders in school-age children, (2) present a conceptual model of language and behavioral development to support early learning, social environments, and high-quality instruction, and (3) summarize a set of interdisciplinary strategies and at supporting language and behavior, as well as children and youth with challenges in both domains.

Several studies have reported early language predicts behavioral functioning later in school (Bretherton et al., 2014; Clegg et al., 2015; Tomblin et al, 2000). Further, lower growth in vocabulary is associated with trajectories of inattention, hyperactivity, conduct problems, and emotional symptoms (Westrupp et al, 2019). Understanding how language influences behavioral and social development has important implications for educational environments (Chow et al., 2021; Cunningham et al., 2021). Children with DLD are twice as likely

to develop clinical behavioral disorders than their typically-developing peers (Curtis et al., 2019; Yew & O'Kearney, 2013) and demonstrate poorer social outcomes, friendships, and peer relations than their peers (Chen et al., 2020; Chow et al, 2021). On the other hand, 81% of children with EBD have unidentified language impairments (Hollo et al., 2014). Given these issues, we present a solution-focused line of research that describes results of studies on the relations between language and behavior, the social networks of children with DLD and EBD, and summative evidence of the language skills of children and youth in the justice system. Then, we present an interaction-centered model of language and behavioral development to contextualize how educational environments can best support development in both domains. Finally, we will overview some strategies aimed at prevention, intervention, and remediation of these challenges."

Developmental language disorders (DLD), SLI

07/17/2024

Morpho-syntactic characteristics of children with ASD and DLD

Osnat Segal; Yehudit Baranes

"Purpose: This study explored the morpho-syntactic traits of Hebrew-speaking children with ASD and Developmental Language Disorder (DLD).

Methods: Eighty Hebrew-speaking preschool children aged 5-to-6 were assessed. All participants had a nonverbal IQ within average range (>75 IQ). They were divided into four groups: ASD-Language Normal (ASD-LN), ASD-Language Impairment (ASD-LI), DLD, and typically developing peers (TD). The language status was verified using a Hebrew language test (Goralnik). Morpho-syntactic skills were assessed using the Katzenberger Hebrew Language Assessment test (KHLA). This test assessed the following language skills: a) inflecting verbs for the past and future tense; b) using the same verb in two verb-derivation patterns (e.g., the verb /lirxots/ 'to wash' as /raxats/ basic-transitive 'wash something' and /hitraxets/ reflexive 'wash oneself'); c) inflecting plural forms with changing stems and/or irregular suffixes (e.g., from /simla/ 'dress' to /smalot/ 'dresses'); d) deriving singular forms from nouns with irregular plural suffixes (e.g., from /magafaim/ 'boots' to /magaf/ 'boot'); e) inflecting the plural adjectives of irregular inflected nouns (e.g., /nemala shxora/ 'black ant'; a noun and adjective with a singular feminine suffix to /nemalim shxorot/ 'black ants'; a noun with a plural masculine suffix and an adjective with a plural feminine suffix); and f) to derive consequential adjectives from a verb (e.g., /metukan/ 'repaired' from the verb /le-taken/ 'to repair').

Results: TD children achieved the highest KHLA scores, followed by ASD-LN, DLD, and ASD-LI groups. The Independent-Samples Kruskal-Wallis test revealed a significant Group effect. Pairwise comparisons showed that TD outperformed ASD-LN, DLD, and ASD-LI, while ASD-LN outperformed DLD and ASD-LI, with no significant difference between DLD and ASD-LI.

Conclusion: These results underscore disparities in morpho-grammatical skills among Hebrew-speaking children with ASD-LN, ASD-LI, and DLD, with ASD-LN demonstrating lower performance compared to TD peers. Children with ASD-LI and DLD exhibited the most pronounced morpho-grammatical challenges."

Early language comprehension in infants and toddlers

07/17/2024

Comprehension of Negated and Counterfactual Constructions in Children Aged 2 and 3

Maxime Tulling; Maya Orey; Ailís Cournane

Counterfactuals like "I wish pigs could fly" communicate situations that are non-actual and postulate what the world would look like if they were. Children start producing counterfactual constructions as early as age 2, but many argue that basic counterfactual comprehension only comes online from age 4. In this study, we investigated whether this apparent reversed production-comprehension asymmetry is rooted in linguistic and task complexity. By implementing a referent selection task, we indirectly probed thirty 2- and 3-year-olds' ability to understand simple factual, counterfactual and negated language. Exploiting 2-year-olds' ability to update mental representations, our task involved twins Peter (loves being clean) and Lily (loves being dirty) and their identical plushies, Panoo and Panoo's friend. After playing hide-and-seek, the plushies were concealed in separate boxes, one of which was spilled with either paint or water. One of the siblings made a comment about Panoo's state (e.g., Factual: Panoo is wet/dry, Negated: Panoo is not wet/dry, and Counterfactual: I wish Panoo was wet/dry), and then the child had to identify Panoo by touch when shown a wet and a dry candidate. There were 16 trials in 4 blocks. Children struggled with the task; many opted for the wet toy regardless of the language prompt, suggesting prior work only probing wet toys may have overestimated their representation

updating abilities. The 2- and 3-year-olds that passed the task performed overall at chance for counterfactuals, suggesting difficulty with undoing the actual world, but not with negation in general. Comprehension of negation varied depending on the utterance, with "not wet" being better understood than "not dry" perhaps due to pragmatic reasons (since there was a spilling event, 'not wet' is informative, while 'not dry' could have been said more effectively using 'wet'). A follow-up experiment with a simplified task is currently conducted to verify these results.

Early language comprehension in infants and toddlers

07/17/2024

Testing a Chunking Account of the Relationship Between Speed of Processing and Children's Vocabulary

Hannah Sawyer; Julia Egger; Caroline Rowland; Julian Pine; Christina Bergmann; Gary Jones; Andrew Jessop; Samantha Durrant

"The speed with which children process familiar words is robustly associated with vocabulary size. Traditional explanations assume that this relationship reflects the effects of processing on learning, but an alternative is simply that children with larger vocabularies are better at processing familiar words. We tested this using CLASSIC (Jones et al., 2007, 2014), a computational model that gradually learns the phonological form of words and word sequences by binding adjacent sequences in the input into increasingly larger chunks. CLASSIC has successfully simulated a range of phenomenon in language development. Here we ask if it can simulate the relationship between processing speed and vocabulary.

In Study 1, we trained CLASSIC on different sized samples of English caregiver input and gave it the same vocabulary and processing speed tasks we previously gave to 2-year-olds (Peter et al., 2019). We successfully simulated the relationship between processing speed and vocabulary size that we see in children. This was because greater exposure to linguistic input leads CLASSIC to not only build a larger repertoire of chunked (sub-lexical) phonological knowledge but also a larger vocabulary and a larger suite of chunked word sequences. Ultimately this means that models with greater exposure to language represent information in fewer chunks (= faster processing).

Study 2 provides an even stronger examination by testing the predictions of the model about the time it will take for children to process different words. We extracted sixteen new words of equal length from the output of CLASSIC, half of which had been processed quickly by CLASSIC (represented by < 1.5 chunks) and half more slowly (> 1.8 chunks). We are testing these in a processing speed task with 24-month-old English children (total N=80; currently N=30). We predict that those words that are processed faster by CLASSIC will also be processed faster by children."

Early language comprehension in infants and toddlers

07/17/2024

The effects of Phonological Awareness Intervention on the Speech Sound Systems of children with SSD

Joanna Baker; Helen Stringer; Cristina McKean

"Children with Speech Sound Disorder (SSD) have difficulty producing speech sounds correctly, making their speech difficult to understand. Children with SSD are at risk of long-term academic and socioemotional difficulties, which highlights the need for early identification and intervention from a Speech and Language Therapist. There are multiple evidence-based interventions for SSD, one being phonological awareness intervention, which focuses on children's knowledge and understanding of the sound structure of their spoken language. Phonological awareness intervention is commonly provided to children with SSD in practice. Prior evidence has shown that it can help difficulties with expressive phonology resolve. However, not all children respond to phonological awareness intervention in the same way; the relationship between expressive phonology and phonological awareness is unclear. The aim of this project is to investigate the effects of phonological awareness intervention on the expressive phonology of children with Speech Sound Disorder.

Twenty-eight children aged 3,11 to 5,11 years with SSD were recruited through Speech and Language Therapy services in North-East England. This study followed a single subject experimental design consisting of three phases. In phase one the children's phonological awareness and expressive phonology were assessed a minimum of three times. In phase two all children received the Newcastle Intervention for Phonological Awareness (NIPA) in small groups for 12 weeks. Their expressive phonology was assessed tri weekly throughout intervention and immediately after intervention. In phase three the children were reassessed after an 8-week consolidation period. The results explore the effects of phonological awareness intervention on expressive

phonology, focusing on whether structural or systemic phonological error processes respond differently to the intervention. The outcomes will support clinical decision-making, by assisting clinicians in determining which children are most likely to benefit from this intervention approach."

Early speech perception and production: infants and toddlers

07/17/2024

The acquisition of the prosodic word of the Totonac verb

Faustino Montes Castañeda

Studies of the acquisition polysynthetic languages have found that children's first verb productions are importantly motivated by the prosodic structure of the language (Demuth 2014, 2018; Forshaw et al. 2012; Gerken, 1991, 1994; Mithun 1989). This result is similar to the process of first verb productions in children learning Totonac (Totonac-Tepehua family), in the municipality of Chumatlán, Veracruz, Mexico. Totonac is a polysinthetic Mesoamerican language that is part of the Totonaco-Tepehua linguistic family. The present study examines prosodic factors in the prosodic word acquisition of the Totonac verb of a (semi)monolingual Totonac girl and two Totonac-Spanish bilingual girls. The children's productions come from a longitudinal study from 2;0 to 4;0 years in natural contexts with 300 hours of documentation. The data analyzed were 40 hours for the (semi)monolingual Totonac focal child and a total of 28 hours for the bilingual girls. Results indicate that accentual prosody plays a central role in the development of the Totonac verb. The acquisition of the Totonac verb prosodic word begins with a language-specific template, guided by the units of the prosodic hierarchy, such as the prosodic word, the foot, and the syllable. These units are determined by the structure of the trochaic foot of Totonac , where the stress is always marked on the penultimate syllable. These findings reveal that the prosodic grammatical rules of the language and the frequency of adult input have an impact on the early acquisition of the Totonac verb.

Early speech perception and production: infants and toddlers

07/17/2024

Minority language speakers' discourse and morphosyntax: error or variation?

Chantal Mayer-Crittenden

In Canada, Ontario's French-language schools are located in minority language communities. Although both French and English are official languages, English is spoken by more than 70% of the population. To identify children with language disorders, it is necessary to have a clear understanding of what is produced by typically developing counterparts. Due to relatively recent changes in the language demographics of students enrolled in French-language schools, speech-language pathologists do not have reliable and valid standards to properly differentiate between these two groups. The purpose of this longitudinal study was to analyze the spontaneous speech and morphosyntactic elements produced by 20 kindergarten children from these communities, and to compare them to the same children's spontaneous language samples, four years later. A total of 22,682 utterances were transcribed and coded. In kindergarten (mean age = 4 years), the children used mostly French to communicate, while in grade 4 (mean age = 9 years) they used English more intraphrastically and interphrastically. The frequency of code-switching to English was 6% in kindergarten and 31% in grade 4. The complexity of the children's syntax did not change significantly between kindergarten and grade 4. These results argue for the importance of exposure to the minority language for learning and maintaining standard French. In addition, explicit instruction in the various morphosyntactic forms as well as activities that allow for academic dialogic discourse are needed. This study shows that the conversational discourse of children from a minority language context in Northeastern Ontario is strewn with several linguistic variations, even after six years of exposure to the standard French variety at school. Furthermore, our results show that the discourse of French-dominant children differs little from that of English-dominant children. However, the variations noted resemble many of those produced by monolingual and bilingual children with a language disorder.

Effects of language input and environment

07/17/2024

The Perceptions of Bilingualism and Spanish Learning Motivation of Latinx Bilingual Adolescents

Cecilia Perez; Alejandro Granados Vargas

"Background:

The proximity to the Mexican border in California ensures a high number of first and second generation Latinx, Spanish/ English bilingual adolescents. Latinx adolescents' perceptions about bilingualism and motivation to learn Spanish may align with the majority group. For these adolescents, the strong effects of globalization and language hegemony, may increase pressure to assimilate to the status quo and could influence their perceptions toward bilingualism and motivation for continuing to learn Spanish, their heritage language. This could be compounded by the unique effects of adolescence, where they are motivated to seek individualization from parents and prioritize peer group identification.

We investigated the extent to which immigration generational status predicted our two outcomes of interest: 1) perceptions of bilingualism in the context of the United States and 2) motivation to learn Spanish.

Methodology:

Spanish-English bilingual adolescents (N =50) from various communities in Southern California responded to two adapted, pre-validated surveys. We used multiple linear regression to examine the relationship between immigration status and perceptions of bilingualism and motivation to learn Spanish.

Results:

Our model did not show a statistically significant relationship between generational status and positive perceptions of bilingualism. However, our model predicted a statistically significant positive relationship between status as a second generation person living in the United States and motivation to learn Spanish, holding all other variables constant.

Discussion:

Although participants in this study generally had positive perceptions of bilingualism and motivation to learn Spanish, immigration status seemed to be influential only in second generation adolescents' motivation. This may be due to a number of factors, such as a desire to connect with the language of their first generation parents. Future research should focus on what factors influence positive views of bilingualism, as generational status did not seem to influence perceptions of bilingualism in our participants."

Effects of language input and environment

07/17/2024

Childcare attendance and parental educational language skills

Marina Jambreus; Alexander Grob; Sonja Hasler; Stefan Zehentmayer; Robin Klaus Segerer

Previous research indicates a strong association between the educational language skills (ELS) of children with a migration background and those of their parents. Through fostering ELS in childcare institutions, policy aims to ensure equal educational opportunities for children from diverse family backgrounds and to reduce the correlation. Numerous studies have demonstrated that attending early childhood educational institutions can promote children's ELS and is central to their scholastic achievement. The present study investigates (1) to what extent parental ELS is associated with their children's ELS and (2) whether this correlation been systematically reduced over the ten years. The data was collected as part of an area-wide compulsory language assessment. The sample includes ten cohorts yearly assessed between 2013 and 2022 with >10,000 preschool children with German as a second language (mean age 36 months; 48% female). The results show — in congruence with previous findings — a significant association between parents' ELS and their children's ELS (mean β2013-2022 = .27, p = .00) In addition, there exists a negative (quadratic) moderation effect of time: Children's ELS become less strongly associated with their parents' ELS across time, i.e. as the ELS intervention is more established. However, starting in 2020, the parental and their children's ELS became again more strongly associated. We interpret this effect to the closure of extrafamilial childcare institutions during the pandemic. As a next step and with coming cohorts, we will investigate whether extrafamilial childcare attendance will reduce the parental and children's ELS again. This result would indicate the importance of extrafamilial childcare attendance in preschool years and hereby a success of the politically initiated intervention to foster children's educational language development from a diverse background.

Effects of language input and environment

07/17/2024

How do children learn to convey gender through speech? An acoustic analysis of child-directed speech

Eugene Wong; Benjamin Munson

"Research shows that children as young as 2.5 years of age are able to convey their gender through speech features, despite the fact that children assigned male at birth (AMAB) and children assigned female at birth (AFAB) do not have anatomical differences in their speech-production mechanisms prior to puberty. Current theories of language acquisition do not account for the learning of phonetic features that signal social identities. Thus, the mechanisms that allow children to learn gendered ways of speaking remain unknown. This study investigates gendered speech patterns in child-directed speech. Specifically, we ask: Do caregivers talk differently to AMAB and AFAB children?

We collected measures of gender stereotype flexibility and speech samples from 36 mothers of children aged two to three years through a story-telling task. The mothers read a male-themed and a female-themed story to their child. We performed acoustic analysis on the speech variables that have previously been shown to index gender in adults' speech: (i) spectral features of of /s/ and /ʃ/, (ii) the overall scaling of vowel formant frequencies, (iii) vowel space dispersion, and (iv) fundamental frequency. We examined the relationships between acoustic features, child's gender, story theme, and caregivers' gender stereotype flexibility through regression analysis. Data analysis is ongoing. This research will help us to understand how gender is constructed and expressed through language, as well as the cognitive mechanism on acquiring social variations of speech."

Effects of language input and environment

07/17/2024

The Effect of Technoference on Parent-Child Interaction and Communication

Nevena Dimitrova; Souhir Chamam; Alexia Forcella; Nadia Musio; Florence Quinodoz

Technoference, namely parental screen use in the presence of a child, is a widespread phenomenon that has negative effects on parent-child interaction and communication. When parents use screens around their children there a fewer interactions and parents are less contingent and responsive to the child. Additionally, children show more negative behaviors, such as whining, frustration and outbursts. Communication is also affected— parents speak and gesture less towards their children and, in turn, children are less likely to develop their language abilities. It remains unknown, however, whether technoference affects the interaction and communication skills of parents and young children above and beyond a non-digital distraction. Fifty-two parent-child dyads (Mchild age= 22 months, range 12-36 months) first played for 5 min (T1); then, the parent was asked to fill out a questionnaire on a tablet (tablet condition), on a printed form (paper-pen condition) or were not interrupted (control condition; T2). Communication was assessed by coding the number of word tokens and types during T1 and T2; child gestures were also coded. Interactive quality was assessed using the Coding Interactive Behavior scale. Results revealed that when parents were distracted (screen and paper-pen conditions), children showed lower social involvement (p=.028), parents were less sensitive to children's communicative signals (ps ≤ .001), and the dyads showed less reciprocity in their exchanges (ps ≤ .001), compared to the control condition. Parental distraction, however, did not show an effect on children's and parents' communication. Findings suggest that parental distraction matters for the quality of interaction, independently on whether parents were distracted by a paper-pen questionnaire or a questionnaire on a screen. These findings likely relate to complex factors regarding young children's experiences and habits with parental screen use.

Effects of language input and environment

07/17/2024

Tonal realization of Mandarin-speaking children with cochlear implants in Taiwan

Ting-Syuan Wang; Pei-Tzu Liang; Chen-Chi Wu; Tien-Chen Liu; Joshua Goh; Janice Fon

Tones in Mandarin are essential in differentiating word meanings and are predominantly realized through manipulation of fundamental frequency (F0). However, for children with cochlear implants (CIs), acquiring tones can be a challenge, as CI devices are incapable of processing F0 directly. Fortunately, research has shown that length of CI experience can potentially counteract the disadvantages CI children face in tonal acquisition given enough time. This study thus intends to investigate the tonal production of Mandarin children with extensive CI experiences to see whether and how they are on par with their normal counterparts. To date, six CI children were recruited five years after implantation (mean age = 8.93 yrs, ranging from 6.30 to 12.23 yrs), along with six age-matched and six hearing-age-matched children with normal hearing. All of them were asked to perform a picture naming task of 42 bisyllabic words, which included all combinations of the four tones in Mandarin. In addition, their phonological working memory and phonological awareness were also tested using digit span and nonword repetition, respectively. The former included maximally nine digits, and the latter

consisted of gap word and nonword phrases of two-, four-, and six-syllables. Preliminary results showed that there was no group difference with regard to perceptual tonal accuracy. However, digit spans and nonword repetition scores of CI children were only comparable to those of their hearing-age-matched, but not age-matched controls. Currently, we are examining the acoustics of the tones by using two sets of acoustic measurements. One includes the tone-dependent reference points extracted from the initial, final, and turning points of a tone. The second set extracts ten pitch points at equal time intervals. By doing so, we hope to elucidate whether the tonal realization of the CI children is both phonologically and phonetically comparable to their (hearing-)age-matched controls.

Effects of language input and environment

07/17/2024

Language, culture, and experience with nature in the development of reasoning about living things

Andrzej Tarłowski; Jolanta Kalinowska; Julia Radzikowska; Pernille Hansen; Sviatlana Kharkevich; Rasmus Kleppe; Magdalena Krysztofiak; Mari Sandbakken; Nina Gram Garmann; Ewa Haman

"Language, categorization and learning are interlocked, particularly so in the domain of biological knowledge. Neonates single out animates in their experience (Simion, Regolin, & Bulf, 2008). Linguistic labels promote learning of superordinate categories, which are linked by nonobvious features. Category representations channel the ways in which children generalize new knowledge within living things (Gelman & Davidson, 2013).

In this study we look at how language development, cultural input from the family and preschool, as well as direct experiences with nature predict preschool children's inductive inferences within living things. Participants include 3 to 5-year-old Polish and Norwegian monolingual and bilingual children growing up in Poland and Norway.

Norwegian culture values direct experiences with nature, children in Norway spend more time outdoors than children in Poland, while formal learning about nature seems to be emphasized more in Poland than in Norway.

We collect information about children's direct and indirect experiences with nature from both their parents and teachers. We measure children's language development with the use of Cross-linguistic Lexical Tasks (Haman et al., 2015). We obtain a comprehensive measure of children's inductive reasoning about living things with the use of Property Induction within Living Things (PILT), a tablet-based task specifically designed for this project.

In PILT, children first learn that an object possesses a novel, internal, functional property and then they are asked to extend the property to an array of other objects. We probe 4 aspects of biological reasoning: relying on animacy vs. perceptual similarity, status of humans within the living domain, diversity-based reasoning, and inclusion of plants in the living domain.

The study is ongoing, so far 76 children have been tested. We expect to find that language development as well as direct and indirect experience with nature relate to the early onset of mature reasoning within the biological domain."

Effects of language input and environment

07/17/2024

Impact of a Professional Development Intervention on Teacher Talk Features

Tone Sofie Ovati; Veslemøy Rydland; Ratib Lekhal; Vibeke Grøver

"High-quality teacher-child interactions in early childhood education and care are essential for promoting language development in children, particularly for dual language learners (Gámez et al., 2017). Shared reading interventions has been shown to promote quality of teacher talk, and both first and second language development in children (Grøver et al., 2022; Wasik & Hindman, 2020). However, we need more knowledge about the effectiveness of such interventions and how they change teacher talk. The current preregistered study investigated the effects of a multi-component intervention aimed at supporting child language development in five multi-ethnic city districts of Oslo. We contrasted an intervention group, that received a practice-based professional development model and pedagogical content, and a control group, that received a less intensified version of the intervention. The following research question was investigated: were there differences in teacher talk quality in shared reading after one year between intervention and control teachers?

Two hundred fourteen classrooms serving children from 1-5 years in 56 centers participated in the intervention study. Audio recordings of teacher-child interactions during small group shared reading was collected pre-

intervention in the fall (N=208) and post-intervention in the spring (N=183), across one school year. The recordings were transcribed and analyzed with the Child Language Data Exchange System (MacWhinney, 2000). We measured teacher talk quality by categorizing question types with an inter-rater reliability (Cohen's kappa) of .86-.92. At both time points we calculated time spent in shared reading (pre-test: M=11,67; post-test: M=14,09) and the number of on-topic questions (pre-test: M=43,53; post-test: M=58,55,), including open ended questions (pre-test: M=7,25; post-test: M=11,47) and closed-ended questions (pre-test: M=19,18; post-test: M=23,61). Preliminary results indicate an intervention effect on time spent in shared reading and specific aspects of teacher talk quality such as on-topic questions. Results will be discussed related to how the intervention was implemented."

Effects of language input and environment

07/17/2024

Family socioeconomic status and early life language abilities: A meta-analytic review

Kirsty Wilding; Anna Brown; Sophie von Stumm

"Children's language develops at different rates, and children of the same age can differ significantly in their language ability. Family socioeconomic status (SES) has been shown to greatly influence children's differences in language development and ability. Children from higher SES backgrounds are on average exposed to more enriching home language environments in their early years, where they experience more sophisticated language than children from lower SES families (e.g., the '30-million-word gap'). These SES-related differences in language environment are thought to beget SES-related differences in children's language abilities, with children from lower SES families showing less vocabulary growth and phonological awareness compared to their more affluent peers. These SES-related differences in language development are evident from infancy and amplify with age, and by the time children reach school age, these differences in speech and language abilities are strong predictors of children's academic performance.

Whilst many individual studies have reported an association between family SES and children's language abilities, these studies have not been systematically reviewed. What's more, whether the association between family SES and child language varies as a function of language domain, SES marker (e.g., maternal education versus family income), or child age (i.e., 0 to 5 years) remains unknown.

We conducted a meta-analytic review, identifying 14,203 articles for screening; retained articles were coded for (a) markers of family SES, including: parental occupation, parental education, household income, subjective appraisals of socioeconomic position, and composite scores; (b) domains of child language, including: phonology, semantics, morphology, syntax, and pragmatics, (c) child age and (d) sample generation. A preliminary multilevel meta-analysis, accounting for 'nestedness' within estimates, suggested a positive medium effect size between family SES and child language across ~160 samples (N ~ 5,400). A meta-regression model suggested that language domain, SES indicator, and child age were significant moderators of the association."

Effects of language input and environment

07/17/2024

The development of linguistic biases in childhood

Sergio Rojo; Kathleen McCarthy; Anna Caunt; Caroline Floccia; Joost van de Weijer; Carita Paradis

"Background. Recent studies show that the development of sociolinguistic competence occurs earlier than previously thought (Dossey et al., 2020). We know that adults display linguistic biases. For instance, speakers of Standard English are considered more 'competent' than speakers with a London accent (Levon et al., 2022). However, we know little about how such biases develop in childhood. This study investigates the development of these biases from age 7-11 years old, and how growing up in a linguistically diverse vs. less diverse environment might shape this developmental process.

Methods. We have collected data from 136 children (aged 7-11) who were born and reside in Devon, England (less diverse area), and we have started data collection in London, England (diverse area). Participants performed 3 accent tasks: 1) accent intelligibility (speech-in-noise), 2) social judgment task (e.g., how friendly they think a speaker with a given accent is), 3) accent classification task, where children are asked to group different accents (based on Jones et al. 2017). All tasks included the local accent, Standard British English, a regional accent (London or Devon accent), and two L2-accented Englishes (French-accented and Chinese-accented). Children completed a receptive vocabulary task (BPVS) and their caregivers completed a questionnaire regarding exposure to accents and languages.

Results. Preliminary analyses of the Devon intelligibility data show better performance with the local and standard accents compared to the London and L2 accents. Moreover, performance improved with age. In the classification task, younger children tended to make broad groups: standard, regional and L2 accents. Older children were more likely to make more groups distinguishing the two regional and the two L2 accents. These findings will be presented together with the social judgement and London data, to provide a detailed picture of how linguistic experience and age influence the development of linguistic biases in childhood."

Effects of language input and environment

07/17/2024

Children's combinations of pointing & language in two contrasting cultures: universals & differences

Jekaterina Mazara; Elena Lieven; Sabine Stoll

"Language and pointing are fundamental features of human communication with pointing as the earliest entry point to intentional communication. Cross-cultural studies indicate that pointing emerges around a similar age and is used for similar communicative functions in various societies. Pointing is especially powerful when it is combined with language. Adults in most cultures use points predominantly in combination with linguistic utterances but how they use them is widely unknown. Here we ask whether these combinations are similar across cultures or rather culture specific. We analyze the use of pointing and language combination in naturalistic longitudinal data of children (1;2 to 4;0) and their surrounding adults in two different cultural settings: urban Russia (St. Petersburg) and Chintang (a rural subsistence farming community in Eastern Nepal).

Our results show that in contrast to claims about the universal preponderance of early index-finger points,even 1-year olds already seem to mirror the culturally preferred way of pointing. Russian infants prefer index-finger points, whereas Chintang infants prefer hand-points.

Children deviate from the distributions in their input when it comes to speech acts.

Adults in both groups, and Chintang adults in particular, produce more imperatives than children. By contrast, children's point-accompanying utterances are predominantly statements, which they use to share observations about the world. Cross-linguistically, children's point-accompanying language progresses from more calls for attention, through naming, to comments about the referent they point out. However, this is not merely a product of their linguistic development, since all three uses are present even in the earliest recordings.

In conclusion, while pointing and accompanying speech exhibit crosslinguistic variation in their distributions, certain features seem to be culturally independent, indicating their potential status as universals of human communicative development."

Effects of language input and environment

07/17/2024

Sex Differences In Child-Directed Speech At Preschool

Marie Peuzin; Aurélie Nardy; Jean-Pierre Chevrot

"Some studies have shown differences in children's language development according to sex – girls performing generally better than boys. These differences are partially accounted for by differences in child-directed speech (CDS) at home. From elementary school to university, some researchers have stated that the teachers' CDS differs according to the pupils' sex. Indeed, teachers interact more with boys and also produce different types of comments depending on the pupils' sex regarding their behavior and schoolwork. However, to our knowledge, no studies were carried out at preschool, which is the first period of school socialization. In our study, we will examine the CDS's characteristics of preschool teachers when talking to boys and girls.

Our analyses are based on the teachers' speech (a male and a female) interacting with pupils aged 3-4 years during schooltime (20 hours of recording) at a French preschool.

As previous studies conducted at other school levels, our results show that teachers talk more to boys, who also receive more utterances relating to classroom management. More specifically, teachers address boys with more utterances referring to behaviors not adapted to the school context. When it comes to positive evaluations regarding the pupils' behavior or schoolwork, no difference is noted. Furthermore, no difference is evidenced either for mean length of utterances or lexical diversity.

We will discuss these results regarding their impact on children's language development and the construction of their gendered identity."

The impact of COVID-19 on children and young people with speech, language and communication needs

Victoria Joffe; Emma Pagnamenta; Rosemary Davidson

"The COVID-19 pandemic has had a profound impact on education and healthcare for children and young people with SLCN, with many children receiving no or very reduced speech and language therapy, potentially impacting academic attainment, friendships, social functioning, and mental health.

This study investigated the specialist support available to children and young people with Speech, Language and Communication Needs (SLCN) during lockdown in the UK, and the impact of COVID-19 on the language, literacy, health, and wellbeing of these students.

Parents/carers of children and young people with SLCN were invited to respond to an online questionnaire through speech and language therapy networks, parent support groups and social media between June and September 2020. Multiple choice, Likert and open-ended questions addressed the impact of COVID-19 on children's social and emotional functioning, schooling, contact with family/friends, and levels of support for and any changes in speech, language, and communication.

151 parents/carers of 89 boys and 59 girls aged 2-25 years with SLCN completed the questionnaire, with most children (N=76) educated in a mainstream setting. The most reported SLCN were difficulties with speech sounds (N=86), using words and sentences (N=72), reading and writing (n=66), social difficulties (N=60), and comprehension (N=57).

Most parents reported a deterioration in communication, social and emotional skills, attention and learning and/or physical health. Parents also conveyed changes in behaviour such as reduced motivation, increased reliance on television/computer games, increased anxiety, and greater dependence on adults. 43% of parents reported that they had rarely or never received support for their child when they needed it during the pandemic.

The implications of these findings for health and education services, in providing the much-needed support to this group post pandemic, to enable them to catch up as much as possible, as well as lessons for managing a future pandemic, are discussed."

Initial Teacher Education Students' Perception of Their Oral Communicative Competence

Verónica Quezada Hernández; Marta Gràcia

"As teachers play a critical role in the classroom as communicators, Initial Teacher Education (ITE) students must develop Oral Communicative Competence (OCC). However, He ron (2019) argues that oral skills are often viewed as cultural capital rather than tools that enable critical thinking and knowledge construction. This overlooks the importance of dialogue and educational conversation between teachers and students for the co construction of knowledge (Gillies, 2015; Mercer, 2000). This study has three objectives: 1) To explore the perceptions of ITE students on the oral communicative competence of their university teachers and themselves; 2) To identify strategies used by university teachers to promote OCC in the classroom from the perspective of ITE students;

3. To understand the needs of ITE students in developing their communicative competence as university students and future teachers, particularly in promoting children 's oral skills

A total of 500 ITE students from the University of Barcelona participated in this study. A Likert type scale with 25 statements and 4 response options related to oral communicative competence was developed. Students were provided with a n email link and had 15 days to respond. The results indicate that the development of OCC is not explicitly addressed in ITE courses. Students feel unprepared to fulfill their future roles as teachers, including promoting children's OCC. The lack of attenti on to OCC in the ITE program may directly impact the ability of future teachers to develop children's communication skills. These skills are essential for children's academic and social development."

The contribution of recasts in dialogue co-construction and language development in daycare centers

Naomi Yamaguchi; Tiphanie Bertin; Pauline Beaupoil-Hourdel

"In adult-child interactions, recasts contribute to the development of children's language by offering them feedback on their productions (Clark, 2014) and by facilitating their involvement in conversation (Bernicot et al., 2006). Recast is a generic term to include all utterances produced in reaction to and following a previous utterance, which necessarily shares common linguistic features with it. While recasts have been thoroughly studied in the family environment or in settings such as speech therapy, it has not been the case in the childcare center setting. The present study aims at providing a general description of recasts provided by professionals in interactions with young children in childcare centers, with a spotlight on phonological, morphological and morpho-phonological recasts and taking into account gestures and gaze. We also investigate how recasts contribute to the formal and interactional co-construction of dialogue between children and professionals, and the potential effects of recasts on children's multimodal productions.

We analyzed 135 interactional sequences with a total of 185 recasts involving 19 professionals and 52 children aged 1;05 to 2;11. We found that 72% of adult recasts were reformulations, half of them produced with a syntactic lengthening of the child's utterance. Metalinguistic reformulations often followed a non-standard utterance at the phonological level while recasts that clearly refer to entities more often followed morphological or morphophonological non-standard forms. After an adult recast, in most cases, children continued the conversation by taking up on the adult recast in 66% of the cases. The continuation of the conversation was enhanced when the adult looked at the child during recasting. Finally, when the child took up the recast, they usually modified their initial utterance.

Results show that recasts are an efficient professional practice for scaffolding language acquisition and for involving children as active participants in a polyadic childcare setting."

Effects of language input and environment

07/17/2024

Vocabulary growth in sign and print: The effect of a sign phonological awareness intervention

Lynn McQuarrie; Charlotte Enns

Word knowledge is an important component of literacy, and there is much evidence for bidirectional relationships between vocabulary knowledge (signed and/or spoken) and reading skills. Reading skills are cultivated through instruction, yet seldom are signed language users taught to build on their strengths and exploit their metalinguistic insights of signed language to support reading skill development. The dearth of research studies on reading interventions for bi/multilingual deaf students leaves educators and clinicians with few resources and tools to provide guidance regarding the innovation of current practice. Here we describe a school-based intervention study that examined the effects of explicit signed language phonological awareness instruction on sign and print word learning in young deaf dual language learners (inclusive of deaf children with and without cochlear implants) who were beginning readers. The goal of instruction was to make sign phonological patterns explicit a) to strengthen the connections (i.e., the bonding) between sign phonological representations and semantic representations to augment sign vocabulary learning and b) to strengthen connections between sign phonological representations and orthographic representations to expand print vocabulary learning. Learning was documented through a multiple baseline across skills single-case experimental design (SCD) replicated across 7 participants who varied in chronological age (ages 6-10), primary language mode (sign or speech), and age of acquisition/exposure to ASL (birth to age 6). We will describe the way in which the intervention was structured and implemented alongside data highlighting how teaching children to attend to the sign phonological properties of words was associated with demonstrated gains in both ASL vocabulary and English word reading vocabulary. A functional (i.e., causal) relation between instruction and skill acquisition was documented for all children who did not have the skills at baseline. The implications of these findings will be discussed along with planned avenues for further research.

Language and literacy, dyslexia and language

07/17/2024

Comprehension of relative clauses in Chinese children with and without developmental dyslexia

Shenai Hu; Jing Zhao; Maria Guasti

"Deficits in relative clause (RC) comprehension has been reported in dyslexic literature (e.g., Byrne 1981; Mann et al. 1984; Smith et al. 1989; Casalis et al. 2013; Arosio et al. 2017). Most of these studies examined languages with head-initial RCs (e.g., Italian), and showed that the comprehension of object RCs is more problematic than that of subject RCs. The current study aims to investigate the comprehension of subject and object RCs in Mandarin-speaking children with DD.

Twenty-two Chinese children with DD (M = 11;7, SD = 0.62), 22 age-matched (CA) children (M =11;7, SD = 0.81), and 22 reading-level-matched (RL) children (M = 9;7, SD = 0.59) completed a character-sentence matching task that tested their RC comprehension, and standardized assessments of vocabulary knowledge and working memory.

Firstly, all the groups displayed a subject over object RC preference in accuracy, but not in response latency. The performance of the DD group was lower than that of the CA group, but similar to that of the RL group. Secondly, the DD and the RL children showed a similar error pattern: when they failed to understand subject RCs, they selected characters randomly; when they did not comprehend object RCs, they were more likely to select the first noun phrase they heard (e.g., shizi "lion" in shizi zhui de ma "the horse that the lions are chasing"). Furthermore, DD children's receptive vocabulary was correlated with their comprehension of RCs, and their phonological short-term memory capacity is associated with a faster comprehension of RCs.

The findings confirm the existence of syntactic difficulties in dyslexia: object RCs are more challenging than subject RCs, a finding that can be explained in terms of structural intervention (Rizzi, 1990, 2004, 2018). They also suggest that syntactic difficulties are likely due to vocabulary knowledge or to verbal working memory limitations."

Language and literacy, dyslexia and language

07/17/2024

Contrasting Predictors of Phonological Awareness in Preschool Children

Benjamin Munson; Challie Johnson

Performance on measures of phonological awareness is a powerful predictor of later reading ability. Explicit phonological awareness measured in kindergarten (when students are age 5-6 in the US educational system) predicts reading in 2nd grade (age 7-8 in the US; Hogan et al., 2005). Understanding factors associated with phonological awareness in pre-readers is critically important to designing effective interventions and enrichment programs for children at risk for reading difficulties. Previous studies have shown that speech perception ability (Rvachew & Nowak, 2006; Benway et al., 2021) and speech production accuracy (Erskine et al., 2020) are associated with phonological awareness scores. In the current study, we examined whether speech production, speech perception, and a third measure of phonological knowledge predict phonological awareness in 92 typically developing five-year-old children in the Upper Midwestern US. The measure of phonological processing was composite score based on the blending and elision subtests of the Comprehensive Test of Phonological Processing-2. The third measure of phonological knowledge was the lexicality effect in repetition (Cychosz et al., 2021). This is a measure of the difference in production accuracy of a sequence of sounds embedded in a real word versus a nonword, such as the /su/ sequence in the real word suitcase versus the nonword soodross. Cychosz et al. argue that this measure indexes the extent to which children's phonological knowledge has been generalized away from the lexicon. A series of path analyses showed that speech production accuracy and the lexicality effect consistently predicted phonological awareness scores, even when a measure of broader language development, vocabulary size, was controlled. Speech perception only predicted phonological awareness indirectly, through its correlations with speech production accuracy and the lexicality effect. These results underscore the importance of measuring speech production accuracy in studies of early reading in children without speech sound disorders.

Language and literacy, dyslexia and language

07/17/2024

Role of Oral Language in Reading Skills of Children with Speech Sound Disorder: A Meta-Analysis

Johanna Hearn; Grace Phillips; Jacob Feldman; Hannah Krimm; C. Schuele

"Purpose: Children with speech sound disorder (SSD) are often reported to be at an increased risk for reading difficulty; however, it is likely that other skills, such as oral language and phonological awareness (PA) differentiate those children with SSD who struggle to read from those who do not. This study synthesizes the literature on the reading skills (a) word attack and (b) word identification in children with SSD as well as the

effects of moderating variables (a) oral language and (b) phonological awareness on word-reading skills in this population.

Method: A systematic search was conducted to identify articles meeting inclusion criteria. Effect sizes are analyzed from studies reporting (a) word attack and/or (b) word identification skills in school age children with or with a history of SSD. Using robust variance estimation, we calculate mean effect and conduct moderator analyses to quantify the role of moderator variables (a) oral language and/or (b) PA in reading skills for participants with SSD.

Results: Analysis is ongoing. Over 40 articles are included in the final study. We anticipate results will demonstrate that overall, children with SSD demonstrate weaker word-reading skills than typical peers. We anticipate that oral language skills and PA skills will differentiate children with SSD at risk for word-reading difficulty from those who are not at risk.

Conclusions: We anticipate results from this meta-analysis will inform understanding of reading skills in school-age children with SSD as well as risk for reading difficulty in this population. A better understanding of this allows us to identify children who may be at risk, provide appropriate intervention, and potentially reduce downstream effects of reading deficits in this population."

Language and literacy, dyslexia and language

07/17/2024

Supporting the inclusion of children with diverse language disorders in whole-group reading activity

Paméla McMahon-Morin; Stefano Rezzonico; Marie-Pier Gingras; Claire Croteau

"Background: To be inclusive, schools must support the participation of all children. However, it is challenging for teachers to improve their use of scaffolding strategies in language-rich activities such as book reading following professional development. Specifically, little is known about how teachers scaffold the participation of children with various disorders that affect language and communication in such activities. Scaffolding strategies could offer sustained language stimulation to these children, in inclusive school settings.

Objectives: 1) To measure the effect of an interactive reading intervention on the participation of children with diverse disorders affecting language and communication and on their interactions with their teacher; 2) To explore teachers' perceptions of the inclusion of these children in whole-group language and literacy activities.

Method: This is a transdiagnostic multiple case study using mixed methods. Participants are six kindergartners with diverse disorders, such as developmental language disorder, autism, Down syndrome, and their five teachers. Verbatim of teacher-child interactions during whole-group interactive reading in pre-, post-, and 3-month post-intervention, were analysed quantitatively with visual analysis and qualitatively with conversational analysis. Teachers participated in individual interviews in pre-, post-, and 3-month post-intervention which were analysed using reflexive thematic analysis.

Results: The results revealed that prior to the intervention, children's participation was very limited or non-existent. After the intervention, teachers are more supportive to varying degrees: they accepted different means of communication or interpretated more communication intents. Teachers relied on the structure of interactive reading, which included repeated readings, to make more room for children's participation. They are deeply concerned about finding a balance between supporting the child and the fear of exposing the child's difficulties to the other children.

Conclusion: The findings may help school practitioners to better support the inclusion of children with diverse disorders affecting language and communication in whole-group language and literacy activities."

Language and literacy, dyslexia and language

07/17/2024

I-ROAR: a free platform for Italian Rapid Online Assessment of Reading

Emanuele Casani; Sendy Caffarra

"Standardized reading batteries require in-person administration of time-consuming, expensive tests, making rapid testing and monitoring of large populations difficult. ROAR is a recent web-based automated rapid-assessment platform (Yeatman et al., 2021) producing scores that accurately approximate in-person standardized tests for English (r=0.94). It is grounded on scientific models postulating lexical categorization as a crucial stage in natural reading (Gagl et al., 2021) and cognitive-psychology studies suggesting cognitive processes involved

in lexical-decision tasks as also involved in visual word recognition (Balota et al., 2006). However, whether promising results obtained in the deep English orthography are generalizable to shallow orthographies like Italian is unclear.

To investigate this, we aim to expand English ROAR to Italian by analyzing I-ROAR predictivity on Italian standardized reading tests.

We are assessing a representative sample of Italian primary school children with standardized tests to determine their language and reading development range. Our core I-ROAR test is a dual-choice, time-limited lexical decision task that children can self-administer through a web browser, serving as an approximation measure of reading skills. We will analyze linear mixed models with I-ROAR scores and ages as covariates and subject and item identity as random factors.

Based on similar behavioral effects in lexical categorization and reading observed in transparent orthographies (Aguasvivas et al., 2020) and theoretical reading models postulating lexical categorization as a crucial stage of visual word recognition without orthographic-depth distinctions (Gagl et al., 2021), we expect English findings to be generalizable to Italian, despite different orthographic depths. However, we anticipate a faster enhancement of reading accuracy and a higher impact of reaction times compared to accuracy (Caravolas et al., 2013), as well as a higher impact of age on Italian word recognition due to the prominent use of the sublexical reading route in the early stages of Italian reading acquisition (Casani, 2021)."

Language and literacy, dyslexia and language

07/17/2024

The predictions of phonological processing to language in children with speech sound disorders

Huei-Mei Liu; Huei-Mei Liu; Chia-Yun Hsu

"Background

Children with speech sound disorders (SSDs) exhibit more speech sound errors and less intelligible speech than children with typical development (TD). Moreover, many SSDs experience reduced language and literacy abilities. The phonological processing abilities could lay the fundamentals for later language development. This study compared phonological processing (e.g., speech perception, phonological awareness, and phonological working memory) and articulation abilities between children with SSDs and TD. The path analysis was used to determine the predictions of phonological processing and articulation abilities for language development.

Methods

122 Mandarin-speaking children (aged 6;6 to 7;3) participated (including 58 TD and 64 SSD). Three standardized assessments, including Initial Consonant Deletion, Articulatory and Phonological Test for Mandarin-Speaking Children (APTMC), and Children's Language Disorder Scale-Revised (LS-R), were administered to measure phonological awareness (PA), articulation, and receptive/expressive language abilities, respectively. Two self-designed tasks were administered to evaluate individuals' Speech perception (SP): the accuracy of consonant/tone discrimination, and Phonological working memory (PWM): the accuracy of non-word repetition (2-6 syllables).

Results

ANOVAs showed children with SSD exhibited inferior performance than TD in PA (F = 4.20), articulation (F = 158.51), PWM (F = 7.94), receptive language (F = 17.90), and expressive language (F = 25.17, p<.001) (all ps < .05), except for speech perception (F = 2.98, p>.05). Path analysis revealed that the abilities of PA, PWM, and articulation have direct effects on receptive language (β= .256, .371, .244, all ps<.01) and expressive language (β= .207, .166, .365, all ps< 05). However, speech perception only has indirect effects on receptive and expressive languages through the mediation of PA (.12, .09), PWM (.10, .03), and articulation (.06, .08) (all ps< 05).

Conclusions

The multiple levels of phonological processing and articulation abilities are directly and indirectly predictive of language development in children with TD or SSD."

Language in other neurodevelopmental conditions

07/17/2024

Story retelling in Down syndrome: Insights from a macrostructural analysis

Elisa Mattiauda; Angela Hassiotis; Alexandra Perovic

Down syndrome (DS) is a neuro-developmental disorder typically associated with mild to moderate levels of learning disability. Language is delayed, and while grammatical deficits are well-documented, less is known about their pragmatic profile. We present retelling data evaluating macrostructural skills in a sample of 26 adults and young people with DS aged 13;7 to 41;7 and a control group of 24 typically developing (TD) children aged 4;2 to 10;7. Participants were exposed to a pre-recorded picture-supported story from the Multilingual Assessment Instrument for Narratives (MAIN) and subsequently prompted to produce a retelling of the story. The narrative consisted of three episodes, each including a Goal statement, an Attempt to reach the goal, an Outcome of the attempt, as well as two internal states (ISs) acting as initiations and reactions to the event sequences. Initial analyses with two matched samples of 12 participants revealed that the group with DS produced significantly fewer elements of story structure (Attempts, Goals, Outcomes, Initiating and Reaction ISs) overall, with a tendency to omit inferential information (Goals and ISs) more often than factual information (Attempts and Outcomes). For example, participants with DS were less likely than controls to describe the intentions of the main character (e.g. 'the cat wants to chase the butterfly') or their emotional states as instigators or reactions to their behaviour (e.g. 'the cat is angry'), while they referred to behaviours that could be directly observed in the pictures at a similar rate as controls (e.g. 'the cat jumped' or 'the cat fell in the bush'). These results suggest that macrostructural skills may lag behind mental age expectations in adults with DS, particularly for aspects relating to perspective taking and inferencing. We discuss explanatory hypotheses by evaluating the contributions of age, structural language skills and cognitive abilities.

Language in other neurodevelopmental conditions

07/17/2024

Verb learning in children with posterior fossa tumors

Aliene Reinders; Vânia De Aguiar; Roel Jonkers

"Background. Intracranial tumors are the most frequent pediatric solid neoplasms (Dörner et al., 2007), and posterior fossa tumors (PPFTs) account for 60% of the cases (Pollack et al., 1995). Survival rates have increased over the past decades, however, survivors of PPFTs have reduced rates of academic outcome and employment (Lassaletta et al., 2015). They also have impairments in several domains of language (Huber et al., 2007; Lewis & Murdoch, 2011; Riva & Giorgi, 2000; Murdoch et al., 2004), including verbal learning (Kingma et al., 2022). To date, the word learning abilities, and more specifically, verb learning abilities of children with PPFTs have not been examined. However, vocabulary knowledge is a strong predictor of cognitive and language abilities (Marchman & Fernald, 2008), so more research should be done on the potential difficulties survivors of PPFTs experience in this domain.

Method. The verb learning abilities of 42 childhood survivors of PPFTs and an equal number of typically developing siblings will be assessed through a novel verb learning task, in addition to background assessments of their verb and sentence production and comprehension abilities. The verb learning task contains items with a varying degree of syntactic complexity using transitive, unergative and unaccusative verbs, of semantic complexity using verbs with a higher or lower degree of concreteness, and of phonological complexity using non-word with a varying number of syllables.

Predicted results. Childhood survivors of PPFTs may perform below typically developing children, with high inter-individual variability in what aspects of verb learning are more impaired. We expect that difficulties in verb and sentence production and comprehension which are syntactic or semantic in nature, correlate with effects of the corresponding syntactic of semantic variables, which are manipulated in the verb learning test. At the conference, the first patient and control data will be presented."

Language in other neurodevelopmental conditions

07/17/2024

Narrative Storytelling in Children with Hearing Impairment

Lara Hardebeck; Prof. Dr. Esther Ruigendijk; Dr. Bénédicte Grandon; Prof. Dr. Ulla Licandro

"Background

Children with hearing impairment (HI) are at risk for oral language development delays (Haukedal et al., 2022; Tomblin et al., 2015). Previous studies of language development in children with HI mainly focused on early

and lower-level language skills, while little is known about more complex oral language skills. Narratives provide information about discourse and various language components (e. g. vocabulary, syntax, semantics) (Wellman et al., 2011). Previous studies that investigated the narrative skills of children with HI are small in scope and the results are heterogeneous.

Current study

Therefore, the present study examined the narrative skills of 20 children (Mage = 11;2 years) with varying levels of HI. Children were assessed on lower-level language skills (receptive vocabulary and phonological working memory) and produced an oral narrative based on a picture story (MAIN; Gagarina et al., 2019).

Results

Children with HI showed high interindividual variability: At the macrostructural level, they produced structurally incomplete episodes and as a consequence their narratives were lacked important content information. At the microstructural level, the analyses revealed low lexical diversity and syntactic complexity. Subsequent analyses revealed that lower-level language skills correlated with the production of the story structure.

Outlook

The findings highlight the relevance of analyzing the narrative skills of children with HI to better understand their abilities when completing a complex linguistic task. Furthermore, results show, that HI in children not only affects lower-level language skills (e. g. receptive vocabulary or phonological working memory skills), but also the expression of higher-level language skills, such as narratives. Results of children with HI will also be compared to narratives of children without HI (data collection to be completed in the Fall of 2023)."

Language in other neurodevelopmental conditions

07/17/2024

What topics do Hindi-speaking children with & without autism talk about in their personal narratives

Vasundhara Srivastava; Angel Chan; Marleen Westerveld

"Most child language studies to date have focused on the structure (macrostructure and microstructure) of narratives. This study, by contrast, focused on the contents/meanings expressed in children's narratives, specifically, the topics of their personal stories. Given that children diagnosed with Autism Spectrum Disorder (ASD) have distinctly different patterns of interests, relating to people, and perceiving the world, compared to neurotypical (NT) children, we examined what topics both groups of children shared in their personal stories with an adult examiner. All children grew up in India, a collectivist society which emphasizes the interdependency between individuals as members of a community.

Twenty-one six-to-nine-year-old Hindi-speaking autistic children with low support needs and 30 age-matched NT children each told six personal stories, in response to six emotion/experience-based prompts (happy/excited, worried, annoyed, proud, problem situation, something important) in the Hindi version of the Global TALES protocol. All narratives were elicited in person and audio-recorded for manual coding of topics, following a previously reported study on methodology.

Differences in topics were noted between autistic children and NT peers in response to the prompts happy, worried, important, and problem, while similar topics were observed for the prompts annoyed and proud. Unlike the NT children who tended to focus on human involvement and broader social relations in their stories, highlighting family events and interactions with peers, autistic children often mentioned objects, nature, and self-time, reflecting more restricted social events centred around parents and siblings. The differences in topics may reflect the social engagement patterns and communication challenges experienced by autistic children. We further discuss the findings in light of the International Classification of Functioning, Health and Disability (ICF) framework. Documenting the topics of personal stories may inspire speech-language pathologists when they consider what topics are functional/meaningful for the children and their families in assessment and intervention."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Children's processing of pronoun ambiguity in German

Angelika Golegos; Theodoros Marinis

"Research on pronoun ambiguity in German has mainly focused on adults. This phenomenon is far less researched in children and therefore, little is known about the developmental path children are undergoing. Our study aims at filling this gap, by investigating pronoun ambiguity in children and adults.

In ambiguous contexts, German allows for two different third-person singular masculine pronouns to resolve ambiguity: the personal pronoun er and the demonstrative pronoun (henceforth d-pronoun) der, see Example (1). Previous studies with adults have shown a strong preference to resolve the d-pronoun towards the object and a moderate preference to resolve the personal pronoun towards the subject, allowing for more flexibility.

1. Der Tiger(j) will den Igel(k) vorsichtig auf die Hand küssen. Aber er(j)/der(k) kann nicht stillstehen.

The tiger wants to the hedgehog carefully on the hand kiss. But he cannot hold still.

'The tiger wants to kiss the hedgehog carefully on the hand. But he cannot hold still.'

The present study investigates 6 to 8-year-old monolingually raising German children (n=26) and compares them to adults (n=65). Data collection is ongoing aiming for 40 child participants. In an online picture selection task, participants listen to sentences that contain two competing characters, followed by an ambiguous third-person singular masculine pronoun: the personal pronoun er and the d-pronoun der. After the sentence, participants are asked a comprehension question that forces them to interpret the pronoun towards one of the two characters by clicking on the image of the respective character.

Results show similar processing patterns for both groups, namely to resolve the d-pronoun towards the object and the personal pronoun towards the subject. However, in the child group, the preferences are far less consistent and show variability, indicating a developmental stage. We will discuss individual differences in processing of pronoun ambiguity represented in the child group."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Danish children's personal narratives on Global Tales: content, evaluation, and theory of Mind

Nadia Nørgaard; kristine Jensen de López; Laura Quintanilla

"Personal narratives through storytelling are important tools for children in their development of language and communication and is an ability that develops in tandem with children's pragmatic abilities and their abilities to take into acount others' perspectives and thoughts when communicating. However, little is known about how children's abilities to tell personal narratives is associated with social-cognitive abilities, and with the child's subjective perception of agency. The current study addresses the relationship between personal narratives in terms of content/topic, mental words, evaluative devices, levels of agency, and theory of mind, self-efficacy, and general language abilities.

Twenty 10-year-old Danish neurotypical children participated in the study. The children produced personal narratives in response to six basic emotion-based prompts of the Global Tales protocol and six self-conscious emotion-based prompts. All narratives were transcribed and coded for microstructure, content/topic following the procedure of the Global Tales protocol, for evaluation devices, level of agency and mental words. All children produced self-reported evaluations of self-efficacy, Happé strange stories and SentenceProduction subtask of CELF-4.

Preliminary results suggests that the children varied in their responses to the ToM task. Comparisons of the topics produced by the children in response to the Global Tales with those reported in studies of children speaking other languages showed some similar, however response to the prompt "annoyed" was often related to situations where the child experienced barriers to independency or inequality caused by others, while "proud" included achievements by others, and the children were less worried about school achievements. Results of associations between self-reported self-efficacy and level of agency produced in the personal narratives and associations between ToM, evaluation devices, and mental words produced in the personal narratives will be presented at the conference. The discussion will highlight the relationship between neurotypical school-aged children's development of personal narratives, emotions, and social cognition."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

The production of referential expressions in narratives of Kam-Mandarin bilingual children

Ruijie Zhao; Wenchun Yang

"When narrating stories, referential expressions are important as they can help listeners trace the story characters as the narrative proceeds. Research on referential choice in narratives has proliferated in the past years but is heavily skewed towards Indo-European languages and children in Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies. This study focuses on the referential expressions in narratives in an understudied language pair (Kam: a Kam-Tai language and Mandarin) bilinguals in China.

A total of 53 5-9 years old Kam-Mandarin minority bilingual children (L1 in Kam and L2 in Mandarin) participated in this study, including 14 preschoolers (mean age = 5;5), 20 first graders (mean age = 7;1) and 19 third graders (mean age = 8;10). Narratives were elicited using the wordless picture book Frog, Where Are You? (Mayer, 1969). Referential expressions were coded in two dimensions: 1) linguistic form including a. nominal expressions: definite noun phrase (NP) and indefinite NP, and b. pronominal expressions: overt pronoun and null pronoun, 2) discourse function including introduction, maintenance, and re-introduction.

Results showed that when introducing new referents and reintroducing a referent, nominal expressions were the most frequent type across the three age groups. When maintaining referents, children produced significantly more pronominal expressions than nominal expressions in both Kam and Mandarin, and children used significantly more pronominal expressions in their L2 Mandarin than in L1 Kam. In addition, children produced significantly more definite NPs in Kam than in Mandarin in maintaining and reintroducing referents.

The findings show that Kam-Mandarin bilingual children produced less informative pronominal forms more in their L2 narratives, probably because various factors including crosslinguistic influence, processing limitations and a clarity-based strategy jointly influence children's performance."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Non-referential gestures improve the online processing of pragmatic inferences in children

Alfonso Igualada; Marc Vidal; Pilar Prieto

Non-referential gestures (i.e., beat gestures together with their accompanying prosody) function as multimodal highlighters of relevant information expressed in discourse. Even though beat gestures have been shown to improve some children's cognitive and linguistic abilities, little is known about their beneficial effect on pragmatic inference comprehension in discourse. Moreover, it is still unknown which is the relative contribution of the gestural and prosodic features of non-referential gestures. This study aims at investigating whether children's online ability to solve pragmatic inferences in discourse is improved with the exposure to non-referential gestures (i.e., beat gestures combined with prosody) and prosodic markers of prominence at different ages. 6- to 8-year-old children (N=78) were exposed to twelve oral stories with a pragmatic inference used to understand beyond what is explicitly stated verbally. The pragmatic inference was extracted based on two lexical clues, an opening clue (e.g., "animal") and a specific clue (e.g., "cheese"), which activated the ability to infer a specific concept (e.g., "rat"). A multimodal visual world paradigm with a Tobbi X2-60 Eye Tracker was used in a within-subjects design. Three conditions were created with variation of the audiovisual information: a non-referential gesture condition (i.e., L+H* pitch accent with a beat gesture), a prosody condition (i.e., L+H* pitch accent), and a control condition (i.e., a non-prominent L* pitch accent). The proportion of looks towards the target image only increased significantly in the non-referential gesture condition in comparison to other conditions. Age differences revealed that only 7-year-old children increased their inference resolution in both non-referential and prosody conditions regarding the control condition. In conclusion, beat gestures and prosody facilitate children's online processing of oral language. This suggests that the embodiment of multimodal markers of prominence influences inference resolution in children.

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Temporal cohesion skills of 5–7 year old Aboriginal children across South Australian communities

Petrea Cahir; Karen Glover; Sheena Reilly; Brown Stephanie; Edith Bavin

Aboriginal children across the Continent now known as Australia use different contact varieties, often learning English as an additional language, or dialect, at school. Research interest in the development of Aboriginal children's language repertoires is growing, yet the characteristics and patterns of storytelling across communities in southern Australia are largely undescribed. Nested within a prospective cohort study of Aboriginal families' health and wellbeing, and in partnership with the Aboriginal Health Council of South Australia and an Aboriginal Governance Group, this paper reports on a study of narrative development with a

sample of 72 children aged 5 to 7 years growing up across different communities in South Australia, the first such study. Described, are the temporal cohesion devices used by children when telling a story based on the book 'Frog, where are you?', a commonly used picture-book in crosslinguistic research. Dialect-specific morphosyntactic features (Aboriginal English varieties) of the children's storytelling are presented and regional patterns and variations identified. Analysis was conducted on markers of temporal cohesion—the use of temporal connective forms (verbal and lexical) and their functions; and the use of majority tense. A study-derived composite measure of temporal cohesion was used to make within- and between-group comparisons. While a clear developmental gradient was not apparent, there were qualitative differences between the youngest and oldest children in the study, and some regional differences. Repetition, a culturally-salient characteristic, was evident. The findings contribute to understanding patterns of narrative and linguistic development for speakers of non-mainstream Englishes and can be of value to educators and clinicians. The knowledge of the variation evident within linguistically and culturally diverse classrooms can help improve the reliability of language assessments, and foreseeably help reduce the risk of misidentifying developmental language problems.

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Preschoolers' spontaneous narratives in social context: Complexity, connectivity, and coherence

Ageliki Nicolopoulou; Ayhan Aksu-Koc

"This paper captures the increasing narrative complexity of preschoolers' spontaneous stories by identifying children's conceptual narrative units in creating their stories and temporal, causal, and character continuity in combining these units. While many studies have examined children's narrative development, they have focused mainly on children's telling stories with the help of story prompts and picture sequences and rarely on spontaneous stories.

The stories were collected in preschool classrooms that included daily storytelling and story-acting activities. Children dictated stories to their preschool teacher, who provided no prompts or other stimuli and wrote down what the child said. These stories were acted out to the entire class by the child-author and their classmates.

We analyzed the first and last story told by 30 children (10 each at 3, 4, and 5 years) over a school year. We coded the stories for (a) narrative units ranging from simple (characters, action, and consequence) partly-elaborated (adding either motive or description) to fully-elaborated (including all elements); (b) temporal and causal markers connecting the narrative units; and (c) the cognitive distance in numbers of intervening narrative units referring to already introduced characters. The results were analyzed both cross-sectionally and longitudinally.

All children told stories that were complete to a large degree. Even the 3s told stories that included simple narrative units that became more complex and elaborated over time and age. The way narrative units were initiated and whether they were explicitly marked with temporal and causal elements advanced with age. Additionally, children at every age group showed remarkable character continuity, but the distance to previously introduced characters was extended as the number of narrative units increased with age. Our results indicate that it was not only age that helped children improve their stories but also the experience of telling stories in a social context."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

A window to gestural and verbal expression of negation in early Spanish acquisition.

Josué Elías Benavides Gómez; Cecilia Rojas Nieto

"Communicative Interaction is a multimodal activity that is realized by several simultaneous signals (Holler and Levinson 2019). The aim of this presentation is to characterize the child's development of multimodal negation in gestural and verbal expressions.

For this work we rely on a multimodal longitudinal data base ETAL-UNAM (Rojas Nieto 2007), and on ELAN software (Wittenburg et al. 2006). We collected the negative gestures and expressions of three children (18 to 36 months, with 4 age cuts): about 100 utterances for each child.

Previous work has established that negative expressions first appear around the age of 18 months (Thorton 2020), conveyed initially by the more basic particles (Sp. no).Other negative items (Sp. nada 'nothing', nadie 'nobody', nunca 'never'), negation in morphology (Sp. negative prefixes in-, des-, a-) (Givón 2001) and negative

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constructions in syntax (Sp. no puedo 'I can not', no quiero 'I don't want', no sé 'I don't know', no tengo Ì have not') appear over the course of early development. Negation realizes a variety of semantic-pragmatic functions: non-existence, failure, denial, rejection, prohibition, incapacity and epistemic denial (Cameron-Faulkner et al. 2007; Beaupoil et al. 2016).

In this presentation, we will report on the development of negative expressions in both gesture and oral form; whether negative messages are conveyed by gesture or oral expressions alone, or by a combination of gesture and oral means; and, in the latter case, how both modalities are synchronized and distributed.

Preliminary observations of the earlier data we focus on show that before the conventional negation gestures, children express negation by action (Beaupoil et al. (2016), the most frequent gesture is articulated with the head (nod), and the negative item, no, is the main means of expressing negation in Spanish. Both gestures and oral expressions serve the primary semantic-pragmatic functions of rejection and denial."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Children's use of linguistic evaluative devices when narrating past personal events

Marleen Westerveld; Carol Westby; Mary Claessen; Nickola Nelson

"Personal narratives, or recounts of personally experienced past events, are one of the earliest and most frequently used discourse types. Personal narratives typically include who and what is involved and where and when the event took place. However, the main function of sharing personal narratives is to inform the listener about what the event meant to the narrator, often through use of linguistic evaluative devices. The current study investigated the presence (types and proportions) of linguistic evaluative devices that have been used in previous studies in the personal narratives of English-speaking 10-year-olds.

A total of 82 children without identified language/learning difficulties produced six personal narratives in response to the six emotion-based prompts in the Global TALES protocol. Narratives were transcribed and analyzed on the use of 12 evaluative devices (compulsion, internal emotional states, evaluative words, intensifiers, mental states, causal explanations, hypotheses, objective judgements, subjective judgements, intent, negatives, and repetition). A factor analysis was conducted to confirm the independence of the types of evaluation used.

Results showed that children used a high frequency and variety of evaluative devices, with participants using between 6 and 12 of the devices across the six personal narratives. When excluding "repetition" and "compulsion" due to their low correlations with other devices, results revealed three factors, accounting for 72.49% of the variance: "causality," "hypothesis," and "judgement."

Appraising children's personal narrative skills on the use of linguistic evaluative devices may provide insight into the child's ability to reflect on their own thoughts, feelings, and beliefs about their experience. The presentation will use a case example of a child on the autism spectrum to demonstrate how to code and analyze personal narratives on the presence of evaluative devices, and to highlight how the results of this analysis may inform clinical practice including goal setting and intervention planning."

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

The effect of shyness on preschoolers' early turn timing

Nils Tolksdorf; Franziska Viertel; Katharina Rohlfing

When taking turns in social interaction, the partners involved precisely time and organize the exchange of their contributions, establishing a temporal structure with minimal gaps and overlaps. While emphasis has typically been placed on how the timing of the turns that children exchange with their caregivers develops with age, or how the linguistic complexity of an utterance influences timing, little is known, however, about how individual differences, such as children's temperamental characteristics, affect the timing of turns. Specifically, considering shyness as a key dimension of individual differences affecting the way individuals engage in interactions with their environment, no work has examined how differences in children's levels of shyness are reflected in their turn-taking behavior within interaction and, in particular, how shyness might be pronounced in its timing as a function of the modality of the turn. In our exploratory study, we assessed the temperament of 27 children aged 4–5 years and systematically analyzed recorded question–answer sequences in a laboratory setting during two standardized language tests, measuring children's turn timing when responding either verbally or nonverbally to

an experimenter. Children were grouped into high, moderate, and low shy children based on their temperament as measured by a standardized questionnaire given to their parents. Results indicate that when children were required to respond nonverbally, there were no differences in turn timing between the shyness groups. However, when children were prompted to respond verbally, low shy children initiated their response significantly faster than their more shy peers. Findings suggest that temperamentally shy children may be more hesitant to take turns, but only when participating in dialogue requiring them to verbalize a response. Critically, given the rapid turn-taking patterns present in children's everyday interactional environments, we discuss potential implications of our findings for children's engagement in conversational settings affecting their learning experiences.

Typical first language acq.: narrative, pragmatics, discourse

07/17/2024

Are each and all the same? A study on the development of universal quantifiers in Dutch

Mieke Slim; Caroline Rowland

"Most languages have multiple universal quantifiers, like 'all', 'every', and 'each'. Learning such quantifiers involves figuring out that these quantifiers are all universal (they quantify over a full set) but differ in distributivity. 'Each' is distributive: If 'each girl rowed across the pond', each girl separately rowed her own boat. 'All' is non-distributive: 'all girls rowed across the pond' can therefore also mean that the girls rowed the same boat together.

Some studies suggest that children learn the universality of different universal quantifiers before they develop sensitivity to differences in distributivity (e.g., Brooks & Braine, 1996). Other studies, however, suggest that children may learn the universality of different universal quantifiers in different stages of development, likely because they acquire the universality and distributivity of a quantifier simultaneously (Feiman & Barner, 2017).

We examine the learning trajectory of three universal quantification in Dutch: non-distributive 'alle' ("all"), and distributive 'elke' and 'iedere' (both "each"). Three- to six-year old children (N = 120) and adults (N = 30) complete (i) an act-out task, in which they are asked to move toy animals with prompts like 'Alle koeien gaan naar de wei' ("All cows go to the field") and (ii) a truth-value judgement task, in which they verify sentences like 'Alle koeien staan in the wei' ("All cows are in the field") against matching and non-matching pictures.

If children acquire the universality of universal quantifiers all at once, their performance will only be modulated by their age not quantifier identity. If children acquire the universality of different universal quantifiers in distinct stages, then performance will depend on both age and quantifier identity. The results will shed light on how children develop abstract semantic representations underlying quantifiers and the mapping of such representations onto linguistic cues."

Typical first language acquisition: lexicon

07/17/2024

First language verb development in typically developing Spanish-English dual language learners

Lindsey Hiebert; Raúl Rojas

Most of the world speaks more than one language, however research on bilingualism is limited. Furthermore, much of the research on bilingual/multilingual children focuses solely on English language development. Yet understanding first language (L1) development over time is important as well given that much of what we know about L1 development shows that it provides the foundation for second language (L2) learning. Information about typical L1 development is also a critical factor in identifying language impairment in dual language learners (DLLs), who are often misdiagnosed. The present study longitudinally tracks L1 verb types and errors in typically developing Spanish-English DLLs from preschool to Grade 2. This represents a replication of sorts using the same method of recording verb errors as in Anderson (2001). Anderson tracked verb types and errors over a year in two typically developing preschool-age DLLs. Conversational language samples were collected approximately monthly over a year, while the present study utilized a different time span and language sampling technique. Spanish narrative samples were collected twice annually (each academic semester) with a greater number of participants and years used to track verb development. Preliminary analyses of 14 participants in the present study across four semesters showed that the types of verbs used in narrative retell language samples were mostly preterit or imperfect. There were distinct trajectories of verb development and errors over two years. One group showed high level maintenance of accurate verb use in L1, a second showed low level maintenance, a third showed a decline in verb tense accuracy, and a fourth group showed an increase. It is expected that further investigation will yield similar results. For clinical purposes, this study adds information

about typical growth trajectories of verb tense accuracy in L1 for Spanish-English DLLs and provides a comparison for more accurate diagnosis of language impairment.

Typical first language acquisition: lexicon

07/17/2024

What are the spelling strengths and challenges of French-speaking adolescents?

Noemia Ruberto; Judith Beaulieu; Catherine Maynard; Geneviève Baran

"Today's regular classes in French-language high schools in Quebec (Canada) are attended by students with diverse profiles, including students with learning difficulties, as well as students from immigrant backgrounds who are continuing to learn French as an additional language. In this inclusive context, our study focused on specific skills that students need to learn: French spelling.

Spelling correctly in French is a challenge for all students (Fayol & Jaffré, 2014), which involves developing base word knowledge (Apel et al., 2019). So far, most studies have focused on the spelling skills of primary school pupils (Daigle et al. 2016; Plisson et al., 2013). Moreover, no study has looked at the specific attributes of inclusive school contexts in terms of students' individual characteristics in relation to their learning difficulties and linguistic repertoire.

The purpose of this study is to describe the spelling skills of French-speaking adolescents. We conducted a descriptive study with 420 students (M: 13.8 years) from 22 different classrooms. From an inclusive perspective, all participants were included in the sample. A gap dictation of 36 words was administered. For each gap dictation, ANOVAs were used to compare the performances according to individual characteristics and word characteristics (parts of speech, word length, word complexity, etc.). The results obtained at the gap dictation differ according to individual characteristics and word characteristics. This enabled us to identify strengths and challenges based on base word knowledge.

The results shed interesting light on the needs of students with diverse profiles according to their base word knowledge. Moreover, results provided interesting insights into the practices that teachers should focus on to promote spelling skills with French-speaking adolescents."

Typical first language acquisition: lexicon

07/17/2024

The effects of visual context on word learning in 14- to 19-month-old children

Dahliane Labertoniere; Géraldine Jean-Charles; Katrin Skoruppa

"During early language acquisition, children's word usage is highly bound to situational and thus visual contexts (Hoff, 2013). Moreover, studies showed that 2- to 3-year-olds were better at word-learning and generalisation when stimuli were presented in the same context—same objects around and same background colour respectively (Axelsson & Horst, 2014; Vlach & Sandhofer, 2011). This suggests that a certain invariance of visual context helps children when learning new words. However, this has never been tested experimentally in younger children.

We compare word learning in 14- and 19-month-olds using visually distinct (C1: change in object orientation and background) and identical (C2) object pictures in a fast-mapping eye-tracking paradigm. During the learning phase, two objects are presented with their label. During the test phase, both objects appear side-by-side with one label.

We calculate the mean proportion of target looking (PTL) in pre- and post-naming phases in test phases and average it by subject. If children have learned to associate meaning to form, we expect a naming-effect to manifest as an increase in PTL in the post-naming phase. Analysis of 39 subjects suggests that 14- to 19-month-olds might benefit from context change when learning new words, while they struggle when context doesn't change. This could be due to an increase in attention during learning in C1. Alternatively, changing the background might help children better infer the target concept by separating it from its context (as our stimuli use highly naturalistic backgrounds).

Considering these results, we conducted a variation of our first study using the same stimuli for C1 but maximising the learnability of the stimuli of C2 by using grey backgrounds in the pictures (ongoing analysis). We will discuss and compare the results of both experiments in light of other research on language development showing enhanced learning under conditions of variability."

Unexpected associations in parent report of early language and communication

Katie Alcock; Kerstin Meints; Caroline Rowland

"Parent report instruments including MacArthur-Bates Communicative Development Inventories (MB-CDIs) are widely used to assess children's development in various domains. Overall, they are shown to be highly reliable and valid and to reveal sensible patterns of association, with children hypothesised to have higher or lower levels of development (due to age, risk factors etc.) found to correspond to this pattern in results from the overwhelming majority of studies.

However, some consistent patterns emerge that are unexpected: In data from North American English, parents of children in particular groups report unexpectedly higher levels of development, such as younger children with higher vocabulary levels or parents from lower SES levels reporting more advanced grammatical development. Likewise UK data shows parents from higher risk groups reporting higher levels of vocabulary, but not gesture.

Parents also differ in their knowledge of the timing of milestones: they know more about the theoretical timing of children's language than cognitive milestones. This can lead to over-reporting of children's actual skills.

We investigated whether these patterns might be due to social desirability (Study 1) or parent knowledge of expected milestones (Study 2).

In Study 1 94 parents of infants 8-18 months completed the UK-CDI, a social desirability scale (the HEXACO) and a "lie scale" (highly unlikely vocabulary) items. Parents who reported higher vocabulary were not more likely to endorse socially desirable answers.

In Study 2 30 parents of infants 8-18 months completed the UK-CDI and questions on knowledge of language and gesture milestones. Parents' accuracy in reporting theoretical milestones was greater for spoken language than for gesture.

We conclude that anomalous patterns of development seen for vocabulary may stem from parent knowledge of milestones – and potential reporting of what infants should be able to do rather than what they can do. Evidence of socially desirable reporting is less convincing."

A Prolonged Syntactic Acquisition: Children's Acquisition of Mandarin Chinese Verb-Copying Sentences

Ren-Fei Bai; Lisa Cheng; Clara Levelt

"Neurolinguistic studies have found that the cortical language network essential for complex syntax processing matures late – the syntax-related dorsal pathway keeps developing well beyond school age (Friederici, 2017; Skeide et al., 2016). We therefore wonder how young children (3-to-4-years-olds and 7-to-8-years-olds) acquiring Mandarin cope with copying sentences in the language. Mandarin verb-copying sentences are sentences with two non-adjacent phonetic realisations of the same verb, with a Subject-Verbi-Object-Verbi-Postverbal Phrase structure. The verb must be copied to satisfy a language-specific constraint that forbids one verb to hold two postverbal complements simultaneously (Huang, 1984). The copying is considered a purely syntactic operation; therefore, studying when children acquire this operation can help us understand the relation between neurolinguistic findings and behavioural data.

Data were collected from forty 3-to-4-year-olds and forty 7-to-8-year-olds using the sentence-repetition paradigm. Participants were asked to repeat to a puppet 15 grammatical verb-copying sentences and 15 ungrammatical sentences lacking the verb copy. Results showed that both age groups repeated the grammatical sentences accurately (percent-of-correct-syllable accuracy, older: mean 95%, sd 0.15; younger: mean 93%, sd 0.16), with no significant between-group differences. In contrast, 3-to-4-year-olds also repeated the ungrammatical sentences accurately (mean 92%, sd 0.18), while 7-to-8-year-olds responded to ungrammatical stimuli with significantly more alterations (mean 86%, sd 0.17, $t(599)=-6.77$, $p<.001$). Statistics confirmed that 7-to-8-year-olds differentiate between grammatical and ungrammatical stimuli ($t(599)=11.42$, $p<.001$). Upon hearing ungrammatical stimuli, 7-to-8-year-olds uttered grammatical sentences 49.67% percent of the time by copying the verb or correcting the sentences in other ways.

Our results suggest that 3-to-4-year-olds can produce correct verb-copying sentences under proper elicitation but have not yet acquired the syntactic necessity of verb copying, while 7-to-8-year-olds are sensitive to the copying necessity. These results show that the acquisition of the verb-copying syntax is relatively late, corroborating the neurophysiological findings."

Typical first language acquisition: morphology, syntax

07/17/2024

Mapping For-Phrases in Degree Constructions

Megan Gotowski

"Background: Relative gradable adjectives (GAs) such as tall express properties that map an individual x to a degree on a scale. These adjectives are able to combine with for-phrases that restrict how x is evaluated with respect to that property. However, there are various subcategories of relative GAs that combine with distinct, yet surface-ambiguous, for-phrases . Here we focus on those that denote (i) a comparison class (Kara is tall for a gymnast), (ii) a judge/experiencer (This is funny for me), or (iii) a functional standard (This shirt is (too) big for me) denoting a purpose.

Research Question: What information is available in the input that could help children recognize different for-phrases and disambiguate surface-level ambiguities?

Corpus Study: We examine CDS via the MacWhinney and Manchester corpus from CHILDES. We extracted all utterances with an adjective and a for-phrase, and coded the adjective category and the for-phrase type. Preliminary Results: We find that distributional information reveals that for-phrases cluster in predictable ways that reveal crucial differences between these ambiguous phrases. The majority of functional standards (~70%) are found with dimensional GAs (tall, long), and co-occur with an adverbial modifier (too, enough) >90% of the time. Judge for-phrases, conversely, are found with GAs that are tough-adjectives (tough, easy), and rarely co-occur with adverbs. Additionally, we find that the "judge" overwhelmingly surfaces as a personal pronoun (for you), whereas functional standards are far more likely to contain a definite NP in our sample. Although GAs are typically found in prenominal position in CDS (Davies et al. 2020), adjectives with for-phrases are more often found in predicative position, suggesting that this environment may highlight the relation between the for-phrase and the GA. We argue that these distributional patterns may be exploited during the learning process."

Typical first language acquisition: morphology, syntax

07/17/2024

Working memory training improves children's syntactic ability but not vice versa: A RCT

Paul Ibbotson; Ernesto Roque-Gutierrez

The status of human language as either an extensive recycler of general cognition or an encapsulated module with processes unique to itself has been intensely contested. The debate is important because it speaks to what language is made of and how it is acquired. Both sides of the debate agree that language interacts with general cognition at some level, however, the extent of this interaction, the causal direction, the developmental periods in which it occurs, and the cognitive domains in which it happens, remains poorly understood. Consequently, we tested several hypotheses about the relation between syntax and working memory (WM). In a pretest/posttest Randomized Control Trial, 104 native Cuban Spanish-speaking children (Mean age = 7 years 2 months; 54 girls) took part in syntax training in their first language, syntax training in their second language, WM training, or no training (control). Compared with the control, children in the training conditions showed cognitive transfer from WM to syntax but not from syntax to WM. The result was most striking in the case of their first language, where WM training was as effective as language training in boosting syntactic performance. As well as establishing cognitive transfer at the group level, we also found that individual differences in WM performance, both at baseline and in training, predicted the extent to which children's syntax improved. The directionality of transfer, the group-level and individual-level results, established in the context of a randomized control design, all point to a strong causal role for domain-general cognition in the processes of language acquisition. This study contributes to a growing body of research showing language is recycling general cognitive processes for its own ends. Furthermore, our design enabled us to establish for the first time not just whether cognitive transfer is possible between these domains, but in which directions.

Typical first language acquisition: morphology, syntax

07/17/2024

Iconicity Affects Children's Production of Adverbial Clauses

Shijie Zhang; Silke Brandt; Anna Theakston

"In English, adverbial clauses can occur in two orders: (1) subordinate-main ("After he plays the drum, he eats a pear.") or (2) main-subordinate ("He eats a pear after he plays the drum."). In (1), the clause order reflects the order of events in the real world–it is iconic. In (2), the clause order is non-iconic. The semantic account proposes that young children assume that what they hear first, happens first and therefore process iconic sentences (subordinate-main order for after-, because-, and if- sentences; main-subordinate order for before-sentences) better than non-iconic ones (De Ruiter et al., 2018). The syntactic account proposes that main-subordinate orders are generally easier to process as they carry a reduced processing load (Diessel, 2005). In comprehension, the semantic account provides a closer match to children's data than the syntactic account. The present study tests whether the semantic account also applies to production, which involves utterance planning and articulation.

We used a sentence completion task in which clause order and connective type (after, before, because, if) were manipulated. Children's individual differences in general language skills, memory, and inhibitory control were also measured to determine their contribution to sentence production. Data from 44 four-year-old, 43 five-year-old, and 22 eight-year-old monolingual English-speaking children, plus 20 adult controls were collected.

Preliminary analyses showed that both four- and five-year-olds produced iconic sentences more accurately than non-iconic ones. In contrast, clause order alone did not play a key role. Eight-year-olds also showed a tendency to prefer iconic sentences, but only for the semantically more complex because- and if- sentences that require an understanding of both temporality and causality. These findings suggest that iconicity benefits children's early processing of adverbial clauses. However, with increasing age children also learn to produce non-iconic sentences, from semantically simpler to more complex ones."

Typical first language acquisition: morphology, syntax

07/17/2024

Acquisition of pronouns in typologically different languages: morphological richness and pro-drop

Natalia Gagarina; Onur Özsoy; Reili Argus; Larisa Avram; Gordana Hrzica; Katharina Korecky-Kröll; Victoria Kazakovskaya; Maria Rosenberg; Ursula Stephany; Ioana Stoicescu; Maria Voeikova; Wolfgang Dressler

"The study uses a large-scale longitudinal dataset to compare the development of subject personal pronouns (PP) in eight languages. Specifically, we aim to find out how morphological richness/ language type and pro-drop impact pronoun acquisition slopes in monolingual children. The study is grounded in Natural Morphology (NM) suggesting the development of a language system out of natural/cognitive processes.

Methods: 25 typically developing children (age range 15-40 months, mean 29 months) acquiring Estonian (3), Croatian (2), German (2), Greek (2), Romanian (3), Russian (4), Swedish (4), and Turkish (5) produced 202,698 utterances in a natural environment (longitudinal spontaneous recordings) with a similar design. For the segmentation of spontaneous speech into utterances a Communication Unit "an independent clause with its modifiers" was used. Verb-based utterances with PP or a zero pronoun from the onset of PP use for one to three years were targeted. Data were investigated in a binomial generalized linear mixed-effects regression model in R.

Findings: Comparisons of the slopes of predicted pronoun use showed the steepest development in non-pro-drop morphologically poor Swedish and German. For Croatian, Estonian, Greek, Romanian, and Turkish few PP were registered before 24 months with a slow increase over time. Overall comparisons of the frequency of pronoun use across languages showed the following order:
Swedish>German>Russian>Estonian>Croatian>Greek>Turkish> Romanian with the prevailing frequency of 1st and 2nd person singular in all languages.

Discussion: The acquisition of PP, measured as the slope development, is connected to morphological richness (less morphologically rich Germanic languages and richer Croatian, Romanian, Greek, Estonian, and Turkish) and pro-drop. Increasing language exposure triggers the steepness of the PP acquisition slope in morphologically rich languages. The use of 1st and 2nd person in child language can be explained by the natural development of communicative needs and is grounded in principles of NM and construction-based theories."

Typical first language acquisition: morphology, syntax

07/17/2024

Acquiring a new grammar from brief input exposure

Mathilde Rochette-Braun; Rushen Shi

"In previous research (Gervain et al., 2008), infants showed the influence of months of prior experience with their native language on learning: 8-month-olds from a head-initial language (Italian) parsed speech streams of an artificial language into phrases head-initially, i.e., a frequent closed-class word heading a following infrequent open-class word. Furthermore, by age one, infants use closed-class words to categorize subsequent open-class words in artificial languages (e.g., Gomez & Lakusta, 2004), as they do similarly for grammatical categorization of their head-initial native language (e.g., using determiners to categorize nouns in Det-N phrases, Höhle et al., 2004; Shi & Melançon, 2010; Babineau & Christophe, 2022).

In a preferential-looking experiment, we investigated whether after a brief exposure, infants can generalize grammatical categories in a novel language with a different head direction than their native language. 14-to-20-month-olds from a head-initial language (French) were briefly trained with a head-final artificial language containing open-class words (X: 16 bisyllabic; Y: 16 monosyllabic) and closed-class words (a: ""alt"", ""ush""; b: ""ong"", ""erd""). One group of infants heard exemplars representing the categorical rules Xa and Yb, e.g., "coomo alt", "coomo ush"; "deech ong", "deech erd". Another group was trained with the reverse rules (Xb; Ya), e.g., "coomo ong", "coomo erd"; "deech alt", "deech ush". Both groups were tested with new X/Y words and the old a/b words in Xa/Yb versus Xb/Ya combinations, e.g., "wazil alt"; "flom ong" versus "wazil ong"; "flom alt". The Xa/Yb were grammatical test trials and Xb/Ya were ungrammatical test trials for the first group, and vice versa for the other group.

Results: infants discriminated the grammatical from ungrammatical trials t(34)=2.204, p<.05. Thus, a brief exposure was sufficient for infants to learn a new grammar with a head direction distinct from their native language. These results demonstrate that the early acquisition mechanism is powerful and flexible."

Typical first language acquisition: morphology, syntax

07/17/2024

Testing the Competing Sources of Input Account of Children's Verb-Marking Errors Across Development

Hannah Sawyer; Colin Bannard; Julian Pine

"The Competing Sources of Input (CSI) account proposes that verb-marking errors (e.g., 'She play') reflect the extraction of unmarked subject+verb sequences from longer structures in the input (e.g., 'Does she play?'). However, apparent support for this account can be explained by effects of unmarked verbs alone. We use two pre-registered corpus analyses to investigate 1) whether there are sequence-effects on English-speaking children's verb-marking errors and whether sequence-effects occur above verb-effects (Study 1) and 2) how these effects change over development (Study 2).

Study 1

4592 third-person singular (3sg) utterances from 12 2- to 3-year-olds found in the Manchester corpus were analysed. Utterances were coded for errors (e.g., baby go=error, baby goes=correct). Bias statistics were calculated using a large collection of child-directed speech including: subject+verb-sequence (SV) bias (i.e., the proportion of occurrences of specific subject+verb sequences in bare versus inflected form, e.g., 'she play' vs. 'she plays'), verb-in-3sg-contexts bias (i.e., the proportion of occurrences of 3sg subject+verb in bare versus inflected form, e.g., 'any 3sg subject+play' vs. 'any 3sg subject+plays') and verb-in-any-context bias (i.e., the proportion of all occurrences of verbs in bare versus 3sg form, e.g., 'play' vs. 'plays'). We found that all three measures significantly predicted errors. The best predictor was SV bias, which accounted for significant unique variance indicating that sequence-effects occurred over verb-effects, directly supporting the CSI account.

Study 2

Data from 12 3- to 4-year-olds found in the Post-Manchester corpus were combined with the data from Study 1 and analysed (N=9263 3sg utterances). The only consistent effect across both groups was SV bias. Verb bias was not predictive in the older group. These findings are consistent with an account which suggests that children recover from errors by becoming more sensitive to context, at first just immediate contexts (e.g., 'she') and eventually more distant contexts (e.g., 'does')."

Typical first language acquisition: morphology, syntax

Thursday Posters

07/18/2024

Measuring Working Memory in German-speaking children through a new Listening Span Task

Angelika Golegos; Kaja Gregorc; Flavia Adani; Theodoros Marinis

"Working memory (WM) is a multicomponent system that is responsible for active maintenance and ongoing processing of information and develops gradually during childhood. Complex WM tasks, such as listening span tasks (LSTs), have been shown to correlate with fluid intelligence and language. LSTs have been adapted for English-speaking children, but few exist in languages other than English. The present study aims to fill this gap by developing and validating a LST for German-speaking children of different ages.

Children were instructed to listen to sentences in blocks starting with 1 sentence at a time per block and increasing to 6 sentences. In each trial, they first judged the truth value of each sentence and finally repeated the last word of each sentence. To measure the LST score, we calculated the number of correct words recalled and for the LST span the block for which the last words were recalled correctly. To measure the task convergent validity, testing included the Raven's coloured progressive matrices for fluid intelligence, the forward digit span for phonological memory, and the backward digit span for WM. Hitherto, we tested 54 German-speaking children from 1st to 4th grade. Data collection is ongoing with the aim to reach 20 children in each grade.

Preliminary results show that both the LST score and span increase gradually with age and school grade. The measures of convergent validity show significant correlations with the LST score and span. However, the LST score seems to be more sensitive than the span. The results demonstrate that the German LST is an adequate tool to measure WM in children. This new tool can be useful for language development studies that aim to address the relationship between WM and language in children with typical and atypical development. Upon completion of the study, the material will become open-access."

Assessment tools, their adaptations, including CDI's

07/18/2024

How reliable are parental reports of vocabulary development in preschoolers?

Magdalena Łuniewska; Magdalena Krysztofiak; Ewa Haman

"For over 30 years, parental reports have been used to study the vocabulary of children under 4 years (Marchman & Dale, 2023). However, the research exploring parental checklists as a measure of vocabulary in older children is very limited (Libertus et al., 2015).

We present a parental checklist based on the items from standardized picture naming and picture recognition tasks: the Polish version of Cross-Linguistic Lexical Tasks (CLT, Haman et al., 2015). First, we tested 94 children aged 3;0 to 5;l1 with CLT. Second, the participants' parents completed a checklist containing the same set of items and marked all the words that they had ever heard in a spontaneous speech of their child.

The parental checklist presented very high internal consistency. The scores of parental checklist and CLT were moderately correlated (r = .38). We compared the total number of words marked by parents and the number of items solved by children in the picture naming and picture recognition tasks. In picture naming, we found no difference between the children's scores and the number of words selected by parents. At the same time, parents selected significantly fewer words than children correctly recognized in the picture recognition task.

When data were analyzed at the level of individual items (i.e. whether parents selected the same items as children solved correctly), we found that the level of agreement was low. The level of the agreement correlated negatively with children's vocabulary, i.e. the more words a child knew, the lower the agreement between the direct measure and parental checklist.

We conclude that parental checklists should be used with caution if the assessed children have a large vocabulary and especially if item analysis is planned. Perhaps, the checklist would be of more use to younger children or children with limited vocabulary."

Assessment tools, their adaptations, including CDI's

07/18/2024

An eye tracking-based lexical processing task for preterm children at 1;6- preliminary findings

Eva Ståhlberg-Forsen; Suvi Stolt

"Background: Very preterm children (born <32 gestational weeks) show less efficient early lexical processing than full-term children. Early lexical processing can be investigated by utilizing an eye tracking-based processing task of which a primary measure is correct looking time (CLT, accuracy). Further validity information on eye tracking-based processing measurements is needed.

Aims: the aim was to gain further validity information on a lexical processing task, developed to assess Finnish-acquiring preterm children's lexical processing at 18 months corrected age. Associations between the children's CLT and concurrent expressive lexical size and composition were investigated.

Participants: 22 very preterm children (10 boys; mean gestational age at birth=28 weeks, SD=2, min.-max.=23–31 weeks).

Methods: Lexical processing CLT at 18 months corrected age was measured with an eye tracking-based processing task (11 Finnish target words, images presented in pairs). Concurrent expressive lexicon size and lexical composition (percentage of words) was measured with the Finnish standardized version of the MacArthur Communicative Development Inventories (Words and Sentences), providing information on lexical development stage.

Results: The mean CLT proportion was 0.51. The mean lexicon consisted of 62 words (30% social terms, 42% nouns, 6% predicates, 4% closed class words). CLT was positively associated with lexicon size (r=0.44, p=0.05) and the percentage of nouns in the lexicon (r=0.72, p=0.00). CLT was negatively associated with the percentage of social terms (r=-0.47, p=0.03). In a linear regression model (p=0.03), CLT and gender explained 26% of the variation in lexicon size.

Conclusions: The study provided novel validity information on a method to measure young children's lexical skills. The findings suggest that the processing task provides valid information at 1;6. Lexical processing measured using the eye tracking-based task was associated with concurrent lexicon size and percentages of nouns and social terms in the lexicon. The topic will be further investigated in upcoming research."

Assessment tools, their adaptations, including CDI's

07/18/2024

Production of sibilants in 3 to 5 years old Czech children

Tanja Kocjančič Antolík; Kateřina Vitásková; Kateřina Bujoková

"Czech sibilants /s, z, ʃ, ʒ/ are typically reported as one of the main reasons for speech-language therapy intervention. Assessment of their production relays on the perceptual impression of the clinician, a comparison to the standard adult variant and to the age-acquisition norms. However, children's productions differ from the adults' and clinical decisions could be improved by comparisons with the productions of age-matched children with typical development. To achieve this, a better understanding of typically developing children's productions is first needed. This can later serve as a basis for new assessment material.

Ten typically developing monolingual Czech children, three 3-year-olds, three 4-year-old, four 5-year-olds participated in the study. In a picture naming task, they produced four repetitions of six words per sibilant. All sibilants were word-initial, followed by a vowel /i, a, u/ or a consonant differing in the involvement of the tongue in its production (no tongue, front part of the tongue, back part of the tongue). Audio and midsagittal ultrasound data were recorded at the same time, which enabled perceptual analysis of errors and analysis of tongue contours.

The perceptual analysis showed that children in all age groups produce the standard variety as well as different types of errors. The latter included substitutions, distortions (in the manner and place of articulation, voicing, and their combinations), additions and deletions. In total, we noted 11 types of productions for /s/, 12 for /ʃ/, 22 for /z/, 25 for /ʒ/. The least number of errors was observed for the 4-year-olds, with the other groups performing similarly. The difference between the voiced and voiceless sibilants was observed in all age groups, suggesting greater articulatory stability for /s, ʃ/. Preliminary articulatory analysis of the productions matching the target shows greater variability in the vertical than horizontal tongue position."

Assessment tools, their adaptations, including CDI's

07/18/2024

The validity, reliability and accuracy of the French Version of the Intelligibility in Context Scale

Leonor Piron; Andrea MacLeod; Christelle Maillart

"Speech sound disorders (SSD) are associated with difficulties in communication, social participation, literacy, and learning. An early identification process is essential to prevent these consequences in children with SSD. Subjective measures of functional intelligibility, such as the Intelligibility in Context Scale (ICS), have already proven to be a very useful tool for the early identification of SSD in preschoolers. The ICS is a widespread tool that has been translated into more than 60 languages and validated in 10 languages. The ICS has been translated into French but has neither been validated, nor standardized. In contrast, the French-speaking context currently requires an increase in the number of tools and measures for the early identification of SSD. This study aims to establish the psychometric properties of the French version of the ICS (ICS-F) in terms of validity, reliability, sensitivity, and specificity, using three speech objective measures: percentage of consonants correct (PCC), percentage of phonemes correct (PPC), and Whole-word Proximity (WWP).

Methods

215 monolingual French-speaking preschoolers, aged 36 to 67 months, without intellectual disability, hearing loss or multilingualism were recruited in preschool settings. We included 135 children who were typically developing and 80 with SSD. Speech was assessed directly by a standardized picture naming task in French. All children's parents completed the ICS-F. For the test-retest reliability analyses, the ICS-F was completed a second time by a subset of parents after one month. The psychometric properties of the ICS-F will be analyzed through construct validity, concurrent validity, internal consistency, test-retest reliability, discriminant analyses (sensitivity and specificity).

Expected results

It is expected that the ICS-F will show good validity and reliability, as well as sufficient sensitivity and specificity, to enable the identification of preschoolers with SSD in a French-language context."

Assessment tools, their adaptations, including CDI's

07/18/2024

Automated Pipeline Provides Personalized Feedback on Short Caregiver-Child Audio Conversations

Alejandrina Cristia; Loann Peurey; William Havard; Gwendal Virlet; Xuan-Nga Cao; Juanita Bloomfield Lescarboura; Ana Balsa; Alejandro Cid; Martín Ottavianelli; José Luis Horta Brasil; Camila Scaff; Kai Jia Tey

"Automated analysis of short caregiver-child conversations could be useful in a wide range of research and intervention contexts. In this paper, we describe an automated pipeline developed in a three-partite collaboration: 1) Economists deploying a randomized control trial (RCT) among low socio-economic status families in Uruguay; 2) a tech company that implemented a WhatsApp chatbot for use in the RCT; 3) a research team specialized in the intersection of speech technology and developmental psychology, whose contribution involves an open-source pipeline for analyses and the online platform Amazon Web Services (AWS).

Caregivers in the RCT record themselves in interaction with their infant (3-36 months) using WhatsApp's audio recording feature. The audio file is uploaded to our pipeline, with a cost of 0.20 US$ per hour of audio analyzed. After fully automated processing, our pipeline calculates a series of metrics, including number of caregiver and child vocalizations, pitch in both types, and number of words in the caregivers' vocalizations. These metrics are then integrated into the feedback the chatbot provides to parents the following day.

The accuracy of the automated metrics were established through comparison against human annotations of the same files for a subset of 20 files, selected from a variety of contexts (meal time, bath time) and annotated using ELAN. Correlations for key metrics were very high (adult vocalization duration, child vocalization duration, child-adult turn counts r>.9; pitch mean and range >.8). Given that all parts of the pipeline are open source and, we trust that our pipeline could provide an economical, reproducible, and scalable solution for researchers and practitioners interested in caregiver-child interaction."

Assessment tools, their adaptations, including CDI's

07/18/2024

The effects of plurilingual instruction on L2/L3 development of children with DLD

Jasmijn Stolvoort; Elena Tribushinina

"Across Europe, schools are now encouraged to incorporate multilingualism in language classrooms. However, research into the effects of plurilingual instruction on L2/L3 learning and motivation is very limited and targets

only typically-developing children. Little is known about L2/L3 learning by children with developmental language disorder (DLD) in school settings. This research fills these gaps and studies the effect of plurilingual language instruction on English as a foreign language (EFL) learning by monolingual and bilingual children with DLD.

Participants were 58 children with DLD learning English as a school subject in 7th grade of specialist education (mean age: 12;05, age range: 11;05-13;02). All participants spoke Dutch as the majority language and 46 participants also spoke a heritage language. The development of English grammar, vocabulary and motivation was first traced over a 15-week baseline period and then over 15 weeks of the explicit plurilingual instruction. During the baseline period, the participants were taught English following a business-as-usual teaching approach, which was mainly implicit and skill-based. During the intervention period, the participants were explicitly taught EFL grammar and vocabulary through comparisons with syntactic structures and vocabulary in Dutch and the heritage languages. The development of syntactic awareness was supported by multisensory shape coding.

The data were analyzed by using (generalized) linear mixed models. Participants did not make progress in English during business-as-usual instruction, possibly due to procedural learning deficits. However, they significantly progressed on grammar and vocabulary during the intervention. No differences between monolingual and bilingual learners were found. Attitudes towards EFL learning and anxiety did not change over time, but learners' opinions of EFL lessons slightly deteriorated after the intervention. Learning gains during the intervention were positively related to the amount of out-of-school exposure to English, Dutch proficiency, and attitudes towards English lessons, and negatively related to EFL anxiety and pretest scores."

Bi-/multilingual acquisition in DLD and developmental conditions

07/18/2024

Nonword Repetition and Dynamic Nonword Repetition Skills in Bilingual Children with DLD

Pui Fong Kan; Pui Fong Kan; Karina Navarro

"In the United States, 21% of individuals are in households where a minority language (L1) is spoken and use English (L2) in the community (e.g., in schools). An estimated 7-10% of bilingual children experience developmental language disorder (DLD), which can adversely impact language development and academic performance. An important clinical concern is the misdiagnosis of typically developing (TD) bilinguals with DLD, while many bilinguals with DLD often go undiagnosed. Previous studies showed that nonword repetition task (NWR) could be a valuable tool for identifying DLD. However, recent studies have raised concerns regarding its sensitivity. This study examined the processing skills of bilingual preschool children using two clinical tasks: nonword repetition (NWR) and dynamic nonword repetition (DNWR).

In Study 1, participants were 30 Cantonese-English bilingual children: 15 diagnosed with DLD and 15 age-matched TD bilinguals (mean age = 45.82 months; SD = 5.2). They were asked to repeat 16 nonwords, varying in syllable length (1 – 4 syllables), adapted from Stokes et al. (2006). A significant difference was found for the 4-syllable nonword conditions ($F(1, 28) = 6.01$, $p < .05$). The specificity rates for the 4-syllable nonwords were .93, but the sensitivity rates were .16, indicating a higher likelihood of false positives.

Study 2 included 4 Cantonese-English bilinguals with DLD and 4 age-matched TD peers (mean = 46.75 months, SD = 1.58). The stimuli were the same as in Study 1. The DNWR comprised pretest, teach, and posttest phases, with a trained examiner providing varying support levels. Modifiability was assessed using the adapted Mediated Learning Observation form from Pena et al. (2006). Wilcoxon test results revealed that children with DLD were less responsive than their TD peers ($\chi2s = 4.05 – 7$, $ps < .05$). These findings suggest that the dynamic nonword repetition task holds promise in assessing bilingual children."

Bi-/multilingual acquisition in DLD and developmental conditions

07/18/2024

Input-output language proportions and code-mixing of an Estonian-English bilingual child

Piret Baird

Bilingual children's language development is related to the input they receive. It has been noted that changes in language input proportions in the bilingual's two languages during early language acquisition are reflected in the child's language output proportions. It has been claimed that most bilingual children code-mix during early language development phases, but as they get older code-mixing rates decline (Cantone & Müller, 2005). This

paper investigates an Estonian-English bilingual child's language input-output proportions over a 2.5-year period (2;3-5;0) in a situation where the input language proportions remained the same. Along with that the child's code-mixing rate and her mean length of utterance scores are investigated, which provides important information not captured in other studies where the input proportions were not as constant as in this study. Last, connections between siblings' code-mixing and the child's code-mixing rates are analyzed to see whether code-mixing by older siblings increases younger siblings' code-mixing rate. The results indicate that in the early phases of language development the child uses all the linguistic resources available to her, regardless of the language her parents address her, and as her language develops she responds more in the language of the conversation and code-mixes less. However, there is also a period where the child unexpectedly almost stops speaking in Estonian regardless of the unchanged input. The data also shows that code-mixed utterances are the longest, hence supporting previous research findings and showing that code-mixing is a tool helping the child to communicate better. Once she has reached a certain level of development in each of her languages code-mixed speech is also less prevalent in the data.

Bi-/multilingual acquisition in typically developing children

07/18/2024

Early vocabulary development in various language environments: The influence of bilingual exposure

Anna Amadó; Eva Aguilar-Mediavilla; Sara Feijóo; Alaitz Intxaustegi; Abel Puigseslloses; Elisabet Serrat-Sellabona

"Recent data indicate that 50 % of the world's child population grow up being exposed to more than one language. The study of Catalan acquisition in bilingual (Spanish-Catalan) children offers a particularly interesting context due to the typological similarity between these two languages and the fact that neither of them is considered a minority or a heritage language. The purpose of our study is to explore early vocabulary development among young Catalan children in various linguistic contexts.

A total of 536 families with children aged 8 to 18 months (M = 13.48; SD = 3.06) participated in our research by completing the Catalan adaptation of the MacArthur-Bates Inventory (Serrat et al., 2022). Our analysis revolves around examining both receptive and productive vocabulary skills in Catalan, considering the degree of exposure to Spanish. Our sample was categorized into three groups: Catalan Monolinguals (children exclusively exposed to Catalan within their family environment), Home Bilinguals (children exposed to Spanish by one parent and Catalan by the other parent at home), and Social Bilinguals (children addressed in Catalan by both parents but additionally exposed to Spanish through relatives or friends within their close social context).

Our results indicate that social bilingual infants achieve higher scores in both receptive and productive vocabulary. However, one-way ANOVA results indicate that these differences are statistically significant only in receptive vocabulary. Specifically, in terms of receptive vocabulary, significant differences emerged, with Social Bilinguals outperforming both Monolinguals and Home Bilinguals.

The results of the present study provide valuable insights to understand early vocabulary development in bilingual children. These findings will be discussed in light of prior research, with a particular emphasis on the participants' sociolinguistic context and other relevant factors such as interlocutor diversity and typological similarity between languages."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Biliteracy Outcomes of Adolescents in a Two-Majority Language Context

Eve Julie Rioux; Elin Thordardottir

"Studies on adolescents and long-term achievement in biliteracy with different language combinations generally report better writing skills in the language of instruction. Adolescents are also reported to perform better when their first language literacy skills are supported. This study examined the writing skills of bilingual adolescents in their two majority-status languages (French and English) asking whether their writing skills compare to those of monolinguals given similar school exposure to French. And how comparable their literacy skills are in both languages given the majority status of their first language (L1) English.

Participants were 41 French-English bilinguals and French monolinguals (12 to 17). Both groups wrote image descriptions in French and English, and their productivity, errors, use of complex syntax and text quality were measured.

In French, both groups performed similarly on productivity and syntax. Bilinguals made more errors but both groups had a high error to productivity ratio. The quality of French productions did not correlate with any of the syntactic measures. Rather, of age, exposure, productivity and errors, low error to productivity ratio best predicted text quality. In both their languages, bilingual adolescents performed equally on syntax and productivity, and made a comparable number of errors considering the language-specific patterns of errors. The quality of their productions was similar in both languages. These results point to similar syntactic performance in French for monolinguals and bilinguals given comparable French literacy instruction. the characteristics of French grammar may account for the high number of errors in French. Being schooled in French did not prevent bilinguals to develop equivalent writing skills in their English L1. The globalized status of English certainly supported the English literacy of bilinguals. These results also highlight a mutual contributing relationship between the ability to write quality content and to respect the spelling and grammar conventions of the language."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Longitudinal study of the early stages of L2 acquisition in chldren of a wide age range

Elin Thordardottir

"There has been debate on the optimal age of L2 acquisition with conflicting results across studies. Age expectations for L2 learning must consider individual language exposure histories. This is currently particularly difficult at very early stages of L2 learning.

To address these issues, this longitudinal study followed 46 children of Mandarin (n=34) and Spanish (n=12) background who were newly arrived in Quebec (Canada) and documented their learning of French over 4 test times. At the first test time, the children ranged in age from 2 to 12 years and were all within their first year in Quebec. All attended French language schools with current French exposure around 40%, ranging up to 65%. The children were administered standardized tests of French vocabulary, verbal fluency and nonword repetition and language samples were collected.

Results revealed a gradual increase in French receptive vocabulary scores over time from a standard score around 60 at Time1 to 90 at Time4. Raw scores were predicted by age (R2 =.178* to .304* across test times), with older children consistently performing better. Standard scores were, however, unaffected by age (p=.065 to .538). As the same standard score requires larger vocabularies with age, this also reflects the more rapid learning of the older children. Mean length of utterance (MLU) was also strongly predicted by age (R2 =.52** at time 1) and MLUs corresponding to the normal range for monolingual and simultaneous bilinguals were seen by time2, accompanied by overall high morphological diversity and accuracy, with the exception of low performance in tense marking accuracy. The high MLUs were accompanied by semantic error patterns and creative uses of wording that resulted in low comprehensibility. Results will also be presented for verbal fluency and nonword repetition. The study sheds light on quantitative and qualitative aspects of early stages of L2 learning."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Second-language phonolexical representations of Italian children in an English immersion program

Valentina Persici; Marinella Majorano

"Relatively little is known about phonolexical development in children learning a second language (L2). This study examined whether Italian children enrolled in an English partial immersion program in Italy show accurate phonological representations of challenging L2 words and whether individual differences are related to age at onset of L2 exposure, richness of exposure to the L2 outside school, receptive vocabulary, and the proficiency in the L2 of the children's parents.

Twenty-eight first-grade children (mean age=6;7 years, SD=0;3) participated in the study. Children were administered a receptive vocabulary test in English and participated in an experimental task in which they had to judge whether an English auditory stimulus matched an accompanying picture. Auditory words could be matched or mismatched with the picture. Mismatched pairs could be unrelated in form and meaning, overlapping in the first segment, or minimal pairs including a challenging vowel contrast for native Italian speakers (e.g., /i/-/ɪ/ contrast; picture: sheep; auditory word: ship). Information concerning age at onset and richness of L2 exposure and parental L2 proficiency was gathered through a validated questionnaire.

Results showed significantly worse performance in the minimal pair condition, suggesting that, although children were actively constructing lexical representations in the L2, their phonological representations of L2 words were underspecified and influenced by their native vowel categories. Performance in this task was not related to age at onset of L2 exposure, receptive L2 vocabulary, or parents' L2 proficiency. Further analyses suggested that richness of L2 exposure outside school was positively linked to L2 vocabulary acquisition but negatively correlated with accuracy in distinguishing minimal pairs, potentially due to exposure to accented input. Findings suggest that greater L2 exposure from non-native speakers outside school may support lexical acquisition but hinder the development of accurate phonolexical representations for children in the earlier stages of L2 learning."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Examining the effects of pre-task planning on form-focused LRE production by young EFL learners

María Luquin; María García Mayo

"In the field of second language acquisition, grammar instruction has been extensively researched due to its crucial role in helping L2 learners develop communicative competence (Loewen, 2005). There is widespread agreement that pedagogical intervention is beneficial and even indispensable in foreign language settings (Nassaji, 2017). One such intervention method is pre-task planning (learners' preparation before engaging in tasks), which has been shown to enhance fluency and complexity in the monologic speech of adult learners (Ellis, 2009). Philp et al. (2006) investigated pre-task planning in interactive tasks with young children in an English as a Second Language (ESL) setting and found it had an impact on the amount of talk, but no study has explored the influence of pre-task planning on the production of language-related episodes (LREs) by young English as a Foreign Language (EFL) children.

This study examined the correlation between planning time and the production of form-focused LREs (FFLREs) by children performing communicative tasks. Thirty-four pairs of 11-12-year-old EFL learners participated in a longitudinal experiment where they narrated picture-prompted stories four times. The learners were assigned to one of three conditions: unguided planning (12 dyads), guided planning (12 dyads), or no planning (10 dyads). Analysis of data collected before the experiment (week 1), immediately after (week 6), and during a delayed post-test (week 8) revealed that, regardless of testing time, the children in all three groups produced significantly more non-FFLREs than FFLREs. Furthermore, significant improvement in the production of FFLREs was observed only between week 1 and week 6. Between-group comparisons showed that both the guided and unguided planning groups performed better than the no-planning group, but the differences were not statistically significant, suggesting that planning had limited benefits concerning FFLREs. The study's implications for methodology and pedagogy will be further discussed."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Best start in bilingual development – early parental intervention on children's language development

Agnieszka Dynak; Katarzyna Bajkowska; Weronika Białek; Jolanta Kilanowska; Joanna Kołak; Magdalena Krysztofiak; Magdalena Łuniewska; Karolina Muszyńska; Nina Gram Garmann; Ewa Haman

"Rich and diverse input is crucial for children's language development. Parent-directed interventions can improve the input and enhance children's language in later years (Reese et al., 2010). Multilingual children are at risk of limited language input, making bilingual families an important target for parent-directed early interventions (Luk & Bialystok, 2013).

To investigate whether we can improve parental knowledge about (bilingual) language development and children's language outcomes, we designed a research-based intervention: an online workshop for expectant Polish-speaking parents living in Norway.

We assigned N = 74 participants randomly to experimental (n = 40) or control (n = 34) conditions and assessed their knowledge about language development and parental behaviors that promote it before and after the intervention. Repeated measures ANOVA showed significant effect of time point (F(72,1) = 30.27, p < .001), meaning that knowledge increased during the intervention and a significant effect of time point x group interaction (F (72,1) = 11,79, p < .001) showing that the increase was driven by the experimental, but not the control group.

We also conducted a linear regression on a subset of participants in the experimental condition to verify what are the best predictors of the participants' increase in knowledge. The regression ($R2 = 0,6$, $F(4,41) = 15,32$, $p <0,001$) showed that the best predictor of increase in knowledge was lower level of knowledge in pretest (the higher the baseline knowledge, the lower the gain ($\beta = -0,61$, $p < 0,001$)).

Our study suggests that providing online intervention is effective in increasing parental knowledge about how to support their children's language development. These results will be accompanied by further (currently being collected) data on children's language outcomes at the age of 12 months in both Polish and Norwegian using CDIs (Fenson et al., 2007)."

Bi-/multilingual acquisition in typically developing children

07/18/2024

The impact of interlocutor context on the speech production patterns of multilingual children

Madlen Jones; Kathleen McCarthy

"Background: Children growing up in multilingual communities are in the process of developing complex linguistic repertoires that contain phonetic features influenced by a variety of languages, accents and speech styles. During the acquisition process, bilingual children often demonstrate cross-linguistic influences in their speech. However, little is known about how children developing bilingual repertoires adapt their speech when interacting with different interlocutors. The current study investigated the production of English stops (/b/, /k/) and laterals /l/ among bilingual children when interacting with speakers from both within and outside of their social network.

Methods: Ten English-Sylheti bilingual children aged 5;11-6;9 were recorded completing a spot-the-difference task (Diapix task, Baker & Hazan, 2011), with three different partners: 1) a researcher and community outsider; 2) a peer from the same community, and 3) their caregiver. We conducted an auditory and acoustic-phonetic analysis (voice onset time, formants) of the children's stop and lateral consonants in each of these contexts (n=1600). Information regarding children's language environment was also collected using an interview-based questionnaire.

Results: Overall, children produced English stops and laterals that were more Sylheti-like in interactions with community insiders (peers, caregivers) and more English-like in interactions with a community outsider (researcher). Specifically, they produced stops with longer VOT and dark or vocalised /l/ (i.e., English-like) with the researcher and shorter VOT and clear /l/ (i.e., Sylheti-like) with their caregivers and peers. An exploratory analysis of individual speaker variation in relation to each child's unique linguistic experience found no clear patterns between language exposure and production patterns. However, possible links between specific language environment factors and the acoustic-phonetic measures suggest that further investigation into bilingual children's social networks may provide insights into the influences on their language development. Taken together, these findings highlight theoretical and methodological considerations for studying multilingual children's developing speech repertoires."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Phonological Production Skills in Spanish-English speaking 30-month-olds

Cynthia Core

"There are few studies of phonological development in children under the age of 3 years acquiring two languages simultaneously. The present study aims to describe consonant production skills in the context of bilingual children's vocabulary and phonological production abilities by including the effects of language exposure, vocabulary, and cross-language phonological skills in Spanish- and English- speaking toddlers.

Participants were 230 typically developing children; 195 bilingual Spanish-English speaking toddlers and 35 monolingual English-speaking children, all 30 months old. Bilingual participants were exposed to both languages from birth, had one parent who immigrated to the US from a Spanish-speaking country, and produced words in both languages at 30 months.

Phonology measures were derived from early-acquired English and Spanish words using a play-based naming task in which children produced words taken from the MacArthur-Bates Communicative Development Inventories and the Spanish version, the Inventario del Desarrollo de Habilidades Comunicativas. Stimuli consisted of 12 words in each language; four words each of two, three, and four syllables. Phonology measures

include phonetic inventory of consonants for each language and percent consonants correct for each language. Parents completed an interview used to obtain measures of relative proportion of language use in the home and family demographics. Caregivers completed the CDI and IDHC to estimate expressive vocabulary size in each language.

Analyses showed that monolingual English-speaking children produced more English consonants than bilingual children (t(214) = 2.86, p = .005). They produced sounds and words slightly more accurately than bilingual children (t(214) = 2.47, p = .014). Significant relations existed between children's consonant accuracy and measures of relative language input, SES, and same-language expressive vocabulary.

Findings provide support for a growing body of evidence that phonological skills can be shared across languages in a way that is different from other language domains, such as vocabulary and grammar development."

Bi-/multilingual acquisition in typically developing children

07/18/2024

L1 use in pre-task planning by child EFL learners: Attention to form, L1 functions and attitudes

María del Pilar García Mayo; Marina Galdeano Chasco

"Pre-task planning (PTP), the learner's preparation before task performance, is a pedagogical interventional effort that has been shown to improve fluency and complexity in adult learners' speech (Ellis, 2009). However, in spite of the growing numbers of child foreign language learners worldwide (Enever, 2018), very little research has been carried out with this population regarding the language used for the PTP stage, specifically their first language (L1), which some second language (L2) acquisition approaches have considered a very important device mediating the learning process (De la Fuente & Goldenberg, 2022).

This study examined whether L1 or L2 use in PTP had a different impact on children's attention to the target feature under study (3rd person –s). Moreover, the functions the L1 serves during interaction and the children's attitudes to its use were considered. Eighteen (n = 18) 11-12 year-old children with an elementary proficiency level worked on a dictogloss task (Wajnryb, 1990) in pairs. They were divided into an L1 PTP, an L2 PTP and a control group. Their oral interaction was transcribed and analyzed for frequency, type and outcome of language related episodes (Swain & Lapkin, 1998) and L1 functions, and an exit questionnaire assessed their attitudes toward L1 use. The findings revealed that the children focused their attention on the form of the L2 during the dictogloss stage but very little attention was paid to the target structure –s. Moreover, PTP did not have a significant impact on the children's attention to L2 form, although the L1 PTP dyads clearly devoted their attention to L2 form during the PTP stage. Neither PTP nor using their L1 in that stage had an effect on the children's attitudes toward the use of their L1 in the EFL classroom. Pedagogical implications and lines for further research will be presented."

Bi-/multilingual acquisition in typically developing children

07/18/2024

On the acquisition of Catalan clitics in a multilingual environment

AURORA BEL

"Acquiring and using clitic pronouns, as well as their properties at the syntax-discourse interface, is not an easy task, especially for children in multilinguals contexts whose L1s have a different repertoire of clitics pronouns from that of the environmental L2. Catalan, our target language, has a rich inventory of clitics that convey different functions (direct object, indirect object, locative, and partitive). While the topic of CLLD (clitic left dislocation) has received some attention in adult L2 Spanish, it has not been addressed neither in child L2 or in Catalan. Here, we discuss data from two innnovative combination of languages: Portuguese-Catalan (N=27) and French-Catalan (N=20) sequential bilingual children, aged between 9-12 years: we also compare them to a group of Catalan-native children (N=25) of the same range age and geographical multilingual environment (Andorra).

Data were collected from two production tasks: one focusing on morphosyntatic knowledge and one on the discourse-sensitive properties (CLLD) with locative hi and partitive en cllitics (accusative and dative clitics were included as control items). As for morphosyntax, all groups behaved similarly when producing partitive en and locative hi with a high rate of omission even among controls, which is typical of language contact situations. Regarding CLLD constructions, Portuguese children differed significantly from controls for partitive

en, whereas French children patterned with natives in both hi and en clitics suggesting transfer of L1 features. All three groups tended to accept sentences with omission, particularly the two bilingual groups with the locative hi, which was revealed the most vulnerable clitic. Divergencies between morphosyntax and interface properties only appeared with partitive en. The similarities and differences in the behavior of bilinguals, compared to natives, are discussed in relation to variable input (Pirvulescu et al. 2014) and the degree of exposure (Daslalaki et al. 2022) typical of multilingual environments."

Bi-/multilingual acquisition in typically developing children

07/18/2024

Does emotion regulation have a differential impact in children with developmental language disorder?

Oriol Verdaguer-Ribas; Mari Aguilera; Nadia Ahufinger; Coral Mayo; Llorenç Andreu; Mònica Sanz-Torrent

"Empirical evidence has suggested children with DLD show difficulties in emotion regulation and comprehension than typically development (TD) children. Although previous evidence highlights the role of parents' emotional regulation in their siblings, there isn't much evidence about the abilities in emotional regulation of parents of children with DLD. This study investigated the possible differences in emotional regulation and the use of two emotional strategies (cognitive reappraisal and expressive suppression) between DLD and TD children and their parents.

Participants were 16 children with DLD and 16 TD children (sex and age paired; Mage = 9,5) and one of their parents (26 mothers in total). ERQ (Emotion Regulation Questionnaire) was administered to children and ERC (Emotion Regulation Checklist) was answered by parents referring to their children. Furthermore, the former had to fill out ERQ and DERS (Difficulties in Emotion Regulation Scale) about themselves.

Results showed children with DLD had significantly more difficulties in emotional regulation (higher scores in the Emotional Lability/Negativity scale and lower scores on the total ERC score) than TD children. The use of emotional regulation strategies was similar in both groups of children. Regarding mothers, no significant differences in emotion regulation were found between mothers of children with and without DLD. Mothers of children with DLD showed significantly greater use of expressive suppression than mothers of TD children. Instead, although there weren't statistical differences, there was a tendency for mothers of TD children adopting more cognitive reappraisal strategies.

Emotion regulation is more affected in children with DLD than TD children, specially Emotional Lability/Negativity, which hinders their ability to handle emotions and, therefore, it brings them more emotional suffering. Furthermore, the overuse of expressive suppression strategy in mothers with DLD children denotes a struggle to accept and handle their emotions, which may undermine their children's emotion regulation capacities."

Developmental language disorders (DLD), SLI

07/18/2024

'My intelligibility and sociability':The preliminary findings on social-emotional skills of children

Nur Seda Saban-Dülger; Merve Dilbaz Gürsoy; Ayşın Noyan Erbaş

"Background: The social-emotional skills of preschoolers with developmental language disorders were reported in many studies. However, phonological skills have been scarcely examined in preschoolers regarding their social-emotional outcomes.

Aim/Objectives: This study aims to show the social-emotional impacts of speech sound disorders (SSD) in preschoolers with age-appropriate language skills.

Methods: Children aged 4-6 with typical language development were recruited. The children without SSD (n=15) were the control group, while those with SSD (n=15) were the study group. Each child from the study group was compared with their age-matched peers from the control group. The phonological skills were assessed with the Picture Naming subtest of the Turkish Articulation and Phonology Test and the parental reports on the Intelligibility in Context Scale. The social-emotional outcomes of SSD were interpreted regarding the parental reports on the Strengths and Difficulties Questionnaire (SDQ) and the reports of children themselves on the Speech Participation and Activity Assessment of Children (SPAA-C).

Results: The total score of SDQ of the study group was statistically significantly lower than the control group (p<.05), particularly the subscale "Hyperactivity" (p<.01). Similarly, the ICS scores were correlated with the

total score of SDQ (p<.05). Moreover, the answers of the children on the SPAA-C were statistically different between the study and control groups (p<.05). there was no statistically significant difference between genders.

Conclusions: Children with SSD had lower social-emotional skills than their peers reflected themselves and their parents. Since social-emotional outcomes can be recognized by their caregivers and themselves, a comprehensive intervention encompassing social-emotional development should be considered. The results of the children with SSD especially exhibited more hyperactive behaviors can indicate externalizing behaviors related to their intelligibility which should also be considered during assessment and therapy planning for preschoolers with SSD."

Developmental language disorders (DLD), SLI

07/18/2024

Phonological Development of Down Syndrome (DS) : A Study Based on 21 Japanese Teenagers

HARUKO MIYAKODA; Saki Fukatsu; Keiko Hara

"The speech of most typically developing (TD) children become fully intelligible at about four years old (e.g. Coplan and Gleason 1988), but the speech of individuals with Down Syndrome (DS) tends to remain unintelligible at a longer range. This long-standing difficulty is generally attributed to the delayed phonological development associated with DS (e.g. Shribery and Widder 1990).

Although data from DS children can be found in previous studies, there are few, if any, studies on the older DS population in Japan. In order to better understand the phonological trajectory of DS in general, it is essential to analyze and assess data from a broader age range.

This study collected data from 21 Japanese speaking DS teenagers (mean chronological age (CA) 16;25). We conducted a PVT-R test to assess their vocabulary ability. In addition, we conducted a segmentation task experiment to test their phonological manipulation skills.

The results obtained are as follows. The vocabulary age (VA) directly correlates with the accuracy rate for the segmentation tasks more than the CA. Furthermore, the segmentation error patterns and the accuracy rate differ between the 5 participants whose VA was three or under, and the remaining 21participants, whose VA was four and above. This result is similar to the one obtained for the TD children (e.g. Naganami 2009, Kato 2014), thus implying that for both groups, a drastic qualitative change takes place some time between three and four (VA). The accuracy rate for the segmentation tasks also indicated a similarity to the TD children's result in that the normal moras showed a high accuracy rate followed by diphthongs, moraic nasals, long vowels and geminate consonants. The DS's phonological trajectory closely resembles that of the TD's, thus shedding light on designing better interventions to stimulate the development of DS's phonological awareness."

Developmental language disorders (DLD), SLI

07/18/2024

Teacher Collaboration Effect on Bilingual Students' Pragmatic Skills in Inclusive Contexts

Diana Gonzalez; Diana Gonzalez; Marta Gràcia; Ana Adam-Alcocer

Incorporating digital tools can be a valuable method for enhancing the quality of teachers' oral competence instruction and improving student learning. This study aims to promote a collaborative, culturally sensitive professional development approach between teachers and speech therapists to facilitate their self-awareness and reflection on quality educational practices to improve student's oral communication and pragmatic skills. Participants were five teachers, from a New York City public school, three of whom were special education teachers and two general education teachers, their groups of students, as well as a speech therapist. The principal instrument used was EVALOE-SSD (Assessment Scale for the teaching of Oral Language in a school context-Support System for Decision Making) (Gràcia et al., 2015, 2023), this digital instrument was used to identify areas in oral competence that needed further development. As part of the professional development program, teachers used EVALOE-SSD, and the speech therapist met with the teachers four times after she observed the classes for four months to discuss and reflect together. Preliminary findings highlight the EVALOE-SSD's value in analyzing communication patterns and trends among bilingual children in inclusive settings. It aids in identifying improvement areas through teacher and speech therapist collaboration. After self-reflection meetings, teachers showed increased awareness of student needs in oral language and pragmatic skills, along with greater utilization of EVALOE-SSD strategies. This also reduced their sense of isolation when discussing teaching challenges with colleagues. In conclusion, the EVALOE-SSD has been effective in assisting teachers

self-reflect on the activities and routines they perform in class, and how they can change them to promote oral language development in their students. In addition, it has proven to be culturally sensitive when evaluating the communication patterns and tendencies of bilingual children in a naturalistic environment and allows areas for improvement to be identified in collaboration with the teachers.

Developmental language disorders (DLD), SLI

07/18/2024

How do children with Developmental Language Disorder learn ordinals and cardinals?

Helena de Vries; Caitlin Meyer; Judith Rispens; Alla Peeters-Podgaevskaja

The early development of language and numeracy skills are thought to be closely connected. The interaction between these two domains is especially visible in children with Developmental Language Disorder (DLD), whose language deficits are frequently associated with verbal numeracy problems, such as counting and arithmetic. Little is known, however, about how language problems affect the early acquisition of numerals by children with DLD. We investigated the ordinal and cardinal knowledge of 27 Dutch-speaking kindergartners with DLD (data collection ongoing: we will present complete data of approximately 30 children with and 30 without DLD), using a comprehension measure (Give Me task) and production measures (Tell Me task and two counting tasks). The error patterns found in production were similar to those reported in previous research, but the comprehension task produced novel findings: at this point in data collection, 76% of all errors by children with DLD on the ordinal trials involved the interpretation of ordinals as cardinals (i.e., children selected three rockets instead of the third rocket). This error pattern contrasts with previous studies on ordinal comprehension in typically developing kindergartners, which suggested that children this age understand that ordinals refer to singular objects if their language has obligatory singular/plural marking. These preliminary findings thus indicate that children do not all equally benefit from such morphosyntactic cues. We therefore argue that children with DLD use different strategies when interpreting ordinals, which likely results from a problem with morphosyntactic number cues. As such, our study shows how problems in morphosyntactic processing can impact numeracy development, giving us a better understanding of how children with and without DLD develop linguistic and numerical knowledge. In doing so, we also achieve a firmer grasp on how language and numeracy interact.

Developmental language disorders (DLD), SLI

07/18/2024

Factors that Contribute to the Learning of Grammatical Forms by Children with DLD

Liza Finestack; Kerry Ebert; Carlos Serrano; Tom Murray

"INTRODUCTION

A core weakness of children with Developmental Language Disorder (DLD) is mastery of grammatical forms (e.g., past-tense -ed, third-person -s). Traditional intervention approaches rely on implicit strategies, including models and recasts, to support children's development of such forms. More recent evidence suggests that explicit instruction, in which an interventionist states the pattern guiding the use of the target grammatical form, may further support learning. However, it is unknown if there are specific child characteristics that influence learning success with different instructional approaches. For example, explicit interventions may require higher levels of attention and executive function, compared to implicit approaches, as additional cognitive skills are needed to take advantage of the explicit input. In this study, we examined the impact of linguistic and nonlinguistic child factors on the grammatical learning of children with DLD.

METHOD

We have enrolled 24, 5- to 9-year old children with DLD (enrollment ongoing). Children completed two language-learning tasks, each of which targeted a unique novel grammatical form (i.e., person marker or gender marker). For one target, the instruction was implicit; for the alternate target, instruction incorporated explicit rule presentations. Predictors of performance on this task included a grammatical test (Structured Photographic Expressive Language Test), a nonlinguistic visual processing speed task, a nonlinguistic auditory sustained selective attention task, and a rating of executive function (Behavior Rating Inventory of Executive Functioning, BRIEF).

RESULTS

Using generalized estimating equations to model item response, preliminary results revealed three factors significantly contributed to learning: instruction type, age, and BRIEF scores. Specifically, older children with lower BRIEF scores (i.e., stronger executive functioning skills) demonstrated greater learning with explicit instruction.

CONCLUSION

Findings indicate that, while language learning is influenced by instructional approach, overall development and caregiver-reported executive function skills also contribute to acquisition of grammatical forms by children with DLD."

Developmental language disorders (DLD), SLI

07/18/2024

Spelling Abilities of Children With Developmental Language Disorder on Words Differing in Complexity

Wendy Bliekendaal; Madelon van den Boer; Britt Hakvoort; Elise de Bree

"Background: Next to their oral language difficulties, children with developmental language disorder (DLD) often have literacy difficulties. Although their word reading outcomes have received substantial attention, this is less the case for spelling. We know that children with DLD spell fewer words correctly than typically developing (TD) children, but it is unclear if they struggle with certain types of words in particular.

Method: We compared the spelling dictation performance of 145 Dutch children with DLD in Grade 5/6 of special education, to that of 126 TD children in Grade 4/5, and 101 TD children in Grade 2/3. The dictation task included transparent words (spaarpot 'piggybank'), analogy-based words (maaien 'to mow'), rule-based words (takken 'branches'), and visual imprint words (cactus 'cactus'). Moreover, we compared spelling outcomes of children with DLD and average to good word reading abilities (n = 62) to those of children with DLD and poor reading abilities (n = 82).

Results: Children with DLD spelled significantly fewer words correctly than the TD Grade 4/5 group, but performed similar to TD Grade 2/3 children. Whereas TD children showed the following effect of complexity: transparent > analogy-based > rule-based > visual imprint, this was different for the DLD group: transparent > analogy-based > rule-based, visual imprint. Within the DLD group, average to good readers outperformed poor readers. The spelling pattern regarding word types was the same in both DLD subgroups.

Conclusion: DLD impacts on spelling outcomes, especially when DLD occurs with word reading difficulties. The mean spelling outcome of the DLD group is similar to that of TD children three to five grades lower. A tentative interpretation of the findings is that children with DLD might rely more on rote memorization in spelling, accounting for the difference in error patterns between the TD and DLD children."

Developmental language disorders (DLD), SLI

07/18/2024

Predicting sentence recall performance in children with and without developmental language disorder

Filip Smolík, Sean M. Redmond, Andrea C. Ash

Sentence recall is a well-established measure of children's verbal abilities, demonstrating high levels of sensitivity and specificity across various clinical conditions. Despite its abiding presence in clinical protocols, the contributors to children's performance remain unresolved. Some reports suggest performance is largely a function of language skills whereas others implicate children's memory capacities. One underexplored possibility is differences may exist between children with neurotypical development and with language disorders. We used structural equation modeling (SEM) to examine the relations between language, sentence recall, and memory components in the affected and unaffected children, controlling for age and nonverbal intellect. Five- to nine-year old English-speaking children (total n=251, located in USA) with developmental language disorder (DLD) and with neurotypical development (ND) were administered subtests from the Clinical Evaluation of Language Fundamentals (CELF4) and the Automated Working Memory Assessment (AWMA-2). Affected status was assigned using the Test of Early Grammatical Impairment (TEGI) (DLD n = 49). We fit a two-group structural equation model with four latent variables: phonological memory (indicated by nonword and digit recall), working memory (list and spatial recall), language (CELF concepts/following directions, word structure and formulated sentences), and sentence recall (parceled subscales of the Redmond Sentence Recall task). The model showed good fit, RMSEA=0.047, CLI=0.99. We then examined mutual correlations of latent variables across groups: the relations between language and sentence recall scores were similar, as were the

relations between language and memory components. However, the sentence recall scores were more strongly related to phonological and working memory in children with DLD. Also, the effect of age on phonological memory and sentence recall was stronger in affected children. The results indicate that sentence recall is a good indicator of language skills in both groups, but that children with DLD may have an additional challenge in phonological memory, partly independent of grammatical/semantic limitations.

Developmental language disorders (DLD), SLI

07/18/2024

The relationship between speech production and perception in children with SSD: a case study

Susana Rodrigues; Juzidmara Pontes; Marta Chainho; Marta Fernandes; Sofia Lima; Ana Baptista

"Background: Speech Sound Disorders (SSD) are the most common communications difficulties among preschool children. Speech perception skills in children with SSD have been studied for several decades, but questions remain regarding understanding the nature of perception difficulties in these children.

Aim: This study aims to reflect on the relationship between speech production and speech perception in children with SSD.

Methods: In this study 4 children aged from 4;4 – 5;3 years were recruited from Speech and Language Therapist (STL).These 4 children identified/ diagnosed with SSD and were divided into two different groups: 2 children with hearing changes and/or history of respiratory infections (Child1; Child2) and 2 children without this history (Child3; Child4). All children were assessed at the level of speech production, through an image naming test and at the level of speech perception, with an image identification test. The data obtained were analyzed qualitatively, in a descriptive way in order to try to understand possible relationships between the production and perception of speech of each child.

Results: For the Child1 and Child4, the relationship between speech production and perception does not seem to be direct, even though segments involved in perception difficulties are absent or unstable in this child's phonological inventory. For the Child 2 and 3, there seems to be some relationship between perception difficulties and some phonological processes evidenced, with some of the segments involved in perception difficulties also being absent or unstable in the phonological inventory.

Conclusions: In this study, speech perception appears to be a critical variable that influences the way children produce speech. However, our results seem to indicate that speech perception does not directly reflect speech production, that is, there does not seem to be a univocal relationship between speech production and speech perception."

Early speech perception and production: infants and toddlers

07/18/2024

Do 14-17-month-old infants use iconicity in speech and gesture to interpret novel words?

Suzanne Aussems; Charlotte Devey Smith; Sotaro Kita

This study investigated whether 14-17-month-old infants use iconicity in speech and gesture to interpret novel words. Although infants' iconic speech comprehension (i.e., sensitivity to sound symbolism) has been shown to be reliable before their first birthday, their iconic gesture comprehension emerges later. We tested the hypothesis that infants' comprehension of iconicity in the spoken modality bootstraps their understanding of iconicity in the gestural modality. Thirty-six (17 girls, 19 boys) 14-17-month-old infants (M = 16.21 months, SD = 1.15) participated in a preferential looking task in which they heard a novel spoken word (e.g., zudzud) while viewing a small and a large version of the same shape (e.g., a square) side by side. All infants were presented with iconic speech and gesture cues matching either the small or the large shape. In the iconic-speech condition, infants received the iconic cue in the novel spoken word (high vs. low pitch) while viewing a neutral gesture. In the iconic-gesture condition, infants received the iconic cue in the gesture (small vs. large hand movements) while hearing a neutral pitch. In the iconic-speech-and-gesture condition, infants received congruent iconic cues in both the novel spoken word and gesture simultaneously (e.g., a high pitch and hand gesture indicating a small object to distinguish a small square shape). The average proportion of looking time towards target shapes did not differ between the three conditions, neither did it differ from chance in any condition, nor was there an advantage of an iconic cue in both speech and gesture than in either single modality. A Bayesian analysis of variance showed that the null hypothesis was 11.6 times more likely to be true than our alternative hypothesis.

Thus, in this experimental study, we found no evidence for the hypothesis that infants' early iconic speech comprehension bootstraps their later iconic gesture comprehension.

Early speech perception and production: infants and toddlers

07/18/2024

Acquisition of Urdu Vowels in Typically Developing Children

Saira Ambreen; Carol To

"The speech sound acquisition studies are largely focused on consonants. A cross-linguistic review by McLeod and Crowe (2018) reported that only 33.3% of the reviewed studies focused on vowel acquisition. A systematic review (Ambreen & To, 2021) found that none of the available studies on Urdu speech sound acquisition focused on vowels. Even though studies from other languages indicate that vowel acquisition is completed before consonants, a study on Urdu is still needed to explore language-specific differences. The emergence and acquisition might be completed later in Urdu as compared to other languages, especially because Urdu has a large vowel inventory, including 23 monophthongs and 15 diphthongs. This study explored the age of emergence and acquisition and the Percentage of Vowels Correct (PVC).

The speech samples were collected from 208 typically developing Urdu-speaking children aged between 2;7 and 6;0 years from Pakistan, by using the Urdu Speech Assessment Test (USAT). USAT elicited monophthongs and diphthongs by using picture naming. The data were transcribed and analyzed in Phon.

Mean PVC increased from 74.6% at 3;0 years to 80.4% at 6;0 years. All monophthongs and diphthongs, except the short vowel /o/ emerged by 5;0 years. However, three out of 23 monophthongs and four out of 13 studied diphthongs were still not acquired by the oldest studied age, i.e., 6;0 years.

This study presents data regarding the emergence, acquisition, and accuracy of Urdu vowels. The findings show that even though the emergence of Urdu vowels is almost complete by the age of 5;0 years, the acquisition continues beyond 6;0 years. Hence, further research is needed to find out the age at which Urdu vowel acquisition is completed. This information is crucial for providing speech therapy services to a huge population speaking Urdu, which is the 10th most spoken language in the world."

Early speech perception and production: infants and toddlers

07/18/2024

Presenting LongFoRMer: A package to organize and analyze long-form recordings

Loann Peurey; Lucas Gautheron; William Havard; Camila Scaff; Shuvayanti Das; KaiJia Tey; Alejandrina Cristia

"Long-form recordings (LFR) collected via child-worn devices are becoming increasingly common in the study of children's input and production. This technique poses several technical and usability challenges, especially because of the sensitivity of the data and their sheer volume. Many researchers adapt their working practices from smaller datasets, leading them to painful situations, including: Having multiple copies of the same large audio files, having divergent spreadsheets describing samples from the audio files (e.g., one spreadsheet describes annotations done in a subset of the files with one annotation scheme, another has the automated counts at the whole file level, etc).

We have developed LongFoRMer (Long-form Recording Manager, formerly ChildProject) a package that allows researchers using LFR to organize their files in a standardized way to facilitate management of these data. This package also provides procedures to import annotations from a wide range of existing formats (LENA's .its, ACLEW annotation structure in ELAN, Praat) into standardized .csv files. It includes clever solutions for the above-mentioned problems, such as annotations covering only sections of the audio and/or subsets of the participants. Through this standardized organization, researchers can also benefit from facilitated instructions to apply open-source and free automated algorithms to return adult word counts and child vocalization counts. The package also includes procedures to evaluate the reliability of automated annotations against their human equivalents. After accompanying several labs in their exploration of our package, we have developed improved tutorials and trouble-shooting sessions. Finally, the package relies on open source tools that facilitate other aspects of work with LFR, namely datalad to allow versions of the data that are lighter (by not including the recordings); and GIN to keep track of dataset versions and control sharing and collaboration."

Early speech perception and production: infants and toddlers

07/18/2024

Infants' Early Development of Neural Encoding of Lexical Tones at Subcortical and Cortical Levels

Ran Gao; Carol Kit Sum To

"Neonates with normal hearing can detect most phonetic distinctions both in and out of their native environment. During the first year of life, their perception capacity will reduce in non- native languages and will improve in native languages (Werker, & Tees, 1984). This procedure is known as perception narrowing and is regarded as the basis for speech and language acquisition (Kuhl, 2008). The neurophysiological mechanism underling perception narrowing generated vast study interest in the past decades. Kuhl (2008) suggested the native language neural commitment (NLNC) hypothesis to argue how auditory neural networks becomes commitment to native language, which represents the latest understanding of neural mechanism of infants' perception narrowing. Most findings of the current studies upheld the NLNC hypothesis, especially the cortical studies (Liu & Tyler, 2023). However, the NLNC hypothesis ignores the physiological maturity of auditory neural circuit itself regardless of the language input.

To make a more comprehensive understanding of the neurophysiological process underling perception narrowing, the current study longitudinally investigates the neural encoding of native and non-native lexical tones at both subcortical and cortical levels for Cantonese learning infants aged two to eight months old. Different components of electroencephalography (EEG) are used to represent subcortical and cortical encoding separately. The frequency following response (FFR) is a subcortical component that used as tool for investigate subcortical development of neural encoding of lexical tones (Novitskiy et al., 2021). The mismatch negative response (MMN) and P1 are widely used in cortical investigation of cortical speech encoding of infants (Cheng, 2013). The According to pervious cross- sectional and behavioral studies, the perception narrowing of lexical tones at cortical levels occurs at around six months (Cheng et al., 2018). We hope that the subcortical encoding develops faster and shows less native sensitive when compared with cortical encoding."

Early speech perception and production: infants and toddlers

07/18/2024

Differences in the impact of SES in noun and verb vocabulary

Katharina Korecky-Kröll

Children's L1 acquisition is a complex process characterized by great variability on many levels. At the level of vocabulary, variability in children's outcomes is in large part a result of variability in their input. One important source of variability in children's input in socioeconomic status (SES). Children of higher SES are generally found to have larger vocabularies than children of lower SES. Child-directed speech (CDS) differs from adult-directed speech (ADS) at various linguistic levels and has been argued to facilitate vocabulary development, which has also been shown to be affected by linguistic and cultural differences in parents' use of nouns vs. verbs. In the present study, we ask whether overall vocabulary, as well as the distribution of nouns and verbs, differ as a function of SES and speech style (ADS vs. CDS). Analyses were based on naturalistic interactions between 28 German-speaking parents and their 4-year-old children (15 from higher, 13 from lower SES). In addition, parents' ADS recorded in interviews with a female researcher was also investigated. For each parent-child dyad, 30 minutes per type of speech (CDS, ADS, CS) were recorded, tagged for lexical categories and analyzed for lemma and token frequencies and lexical diversity (VOCD) as a function of speech type (CDS, ADS, CS), socioeconomic status (SES), and lexical category (nouns vs. verbs). Results show considerable differences in the effects of SES for nouns vs. verbs and for CDS and ADS: verb vocabulary is less prone to SES effects than noun and overall vocabulary. There are no SES effects in ADS, whereas SES effects are found for overall, noun and verb vocabulary in both CDS and CS. However, SES effects of verb vocabulary are always weaker than those of noun vocabulary and overall vocabulary in both CDS and CS. Results are explained by SES-related differences in parenting styles.

Effects of language input and environment

07/18/2024

From phonics songs to Paw Patrol: The quality of language in YouTube videos watched by pre-schoolers

Joanna Kolak; Gemma Taylor; Padraic Monaghan; James Bonus; Brenna Hassinger-Das; Rebecca Dore

"Pre-schoolers are increasingly engaging with streaming video apps. In 2022, YouTube was the most popular streaming video app among children in the US and the UK, used by 60% of American 4-18-year-olds (Statista,

2023), and by 87% of British children aged 3-4 (Ofcom, 2023). The pre-school period is crucial for language development (Rowe, 2012) and high-quality media have the potential to support language development (Jing et al., 2023), yet previous studies have shown that educational apps targeting pre-schoolers involve only a small proportion of complex sentences and questions, which are constructions conducive to language development (Kolak et al., 2023). However, no studies to date have explored the quality of language in the videos watched by pre-schoolers on YouTube.

Here, we analysed the quality of language in 189 educational YouTube videos (mean duration = 33 minutes, SD = 2) that a group of parents reported as recently watched by their 3- to 5-year-olds. Transcription and coding are ongoing. We aim to:

1. Analyse the overall quality of language in videos watched by US pre-schoolers.

2. Examine the extent to which video language quality differs by the viewing child's age.

3. Examine the extent to which language quality differs in videos classified as containing shallow vs deeper educational content.

In our analyses, we will focus on (a) psycholinguistic features of words (age of acquisition (AoA), concreteness, frequency), (b) utterance types (fragments, copulas, imperatives, questions, subject-predicates, complex) and MLU. We predict that MLU, AoA and proportion of complex sentences and questions in the videos will increase with the age of audience, whereas frequency, concreteness and the proportion of fragments will decrease with age (Cameron-Faulkner et al., 2013) and in videos with deeper educational content (Taylor et al., 2022). These findings will provide insights regarding ways to harness digital media to support children's language development."

Effects of language input and environment

07/18/2024

Parent-child interactions in Developmental Language Disorder: A systematic review

Merel van Witteloostuijn; Athena Haggiyannes; Elise de Bree; Elma Blom

"It is widely acknowledged that the language environment plays a key role in child language development. In children's early years, parents act as the main provider of communicative input, and both the quantity and quality of parent-child interactions are known to be crucial for successful language development. Parent-child interactions may have a differential effect on language outcomes in children with Developmental Language Disorder (DLD), as these children have severe problems with language uptake and language processing. Currently, we lack an understanding of the most important aspects of parent-child interactions in stimulating language development in these children. The current systematic review is the first to provide an overview of (1) the aspects of parent-child interactions that have been assessed in previous studies, (2) the methods used to make these assessments, and (3) what is known about associations between aspects of parent-child interactions and child language outcomes in DLD (up to 6 years of age). This review was preregistered on Prospero.

Our systematic literature search yielded 6,784 studies, of which 67 articles were included in the final review. Preliminary analyses show that many of the included studies assessed multiple aspects of parent-child interactions. Most studies assessed linguistic aspects (e.g., lexical diversity, grammatical complexity, 76%), followed by interactive aspects (e.g., parental responsivity, sensitivity, 55%), turn-taking (34%), and joint engagement (19%). Parent-child interactions were primarily assessed using video analysis (85%) during free-play settings (67%), with observations typically ranging between 5 and 30 minutes in length (94%). We are currently analyzing patterns in the 42 studies (63%) that report on associations between the abovementioned aspects of parent-child interactions and language outcomes in children with DLD. The findings will be informative for language development theory as well as for professionals supporting language use at home in the context of DLD."

Effects of language input and environment

07/18/2024

Elicited word order patterns in transitive events by deaf signers with late onset of Chinese Sign La

Qi Cheng; Hao Lin; Yuting Zhang

"Deaf individuals in China often have delayed onset of Chinese Sign Language (CSL) as their first, functional language. It is less clear how delayed first language onset influence their use of basic clausal structures, such as

word order, during language production. Studying this population can help us better understand the role of early language experience on syntactic development.

In the current study, we examined the elicited CSL word order patterns of transitive events by Chinese deaf individuals with late onset of CSL exposure. We included 8 profoundly (>90dB) and prelingually deaf signers from Jiaxin, Zhejiang (age 47-64, age of CSL 7-10). All had minimal functional use of written Chinese, making CSL their first and only functional language. We also have 30 deaf early CSL-Chinese bilinguals as a control group. The participants were asked to describe 20 transitive events (10 with animate, human objects, 10 with inanimate objects) in CSL after naming the individual characters correctly.

Unlike the predominant use of SVO word order by proficient early bilinguals, late CSL signers showed overall less consistent use of word order. For the events with inanimate objects, they dropped 35% of the objects. When they actually included the object in their production, their dominant word order was SOV (mean 81.5%, range 50%-100%). For the transitive events with animate objects, they produced two successive events instead of one transitive event in 30% of the trials. The rest of the trials also showed idiosyncratic word order patterns. Furthermore, the character on the left side of the picture is significantly more likely to be mentioned first (92%). These observations suggest that even after decades of experience with a natural language, late signers of CSL still show atypical uses of word order, and their production is influenced by language-external factors such as spatial arrangement."

Effects of language input and environment

07/18/2024

Morphopragmatics of address terms in Turkish pet-, infant-, child- and adult-directed speech

F. Nihan Ketrez

"In this study, we compare and conrast the morphopragmatic (Dressler and Marlini Barbaresi 1994) structure of address terms in pet-, infant-, child- and adult-directed speech (PDS, IDS, CDS and ADS, respectively). Following Mattiello et al. (2021) and Dressler et al. (2022), we hypothesize that pet-directed speech is asymmetrical beause pets, in contrast to humans, are nonverbal, and this asymmetry results in different realization of morphology. We draw our data from Turkish, an agglutinating language, where address terms can bear diminutive (e.g., Ali-cik 'Ali-DIM'), hypocoristic (e.g., Ali-ş 'Ali-HYP') as well as possessive markers (Ali-m 'Ali-POSS&1sg') and various combinations of them (e.g., Ali-ciğ-im 'Ali-DIM-POSS&1sg'), and are used along with morphologically bare forms (e.g., Ali). So Turkish provides a good venue for the study of morphopragmatic density of address terms.

Participants included 25 pet owners, 14 parents of non-verbal infants (0;3-0;11), 20 parents of verbal children (1;2-3;0) and 15 adults. Spontaneous speech of participants were recorded and transcribed following the conventions of CHILDES. Terms of address were targetted and coded for analysis.

The results suggested that PDS and IDS had more address terms and more morphopragmatic markers of endearment and affection than CDS and ADS. In both PDS and IDS 62% of address terms were morphologically complex vs. 45% in CDS and 30% in ADS. In terms of the frequency of morphopragmatic markers, PDS was similar to IDS and less similar to CDS and ADS.

These results are in line with Matiello et al. (2021) and Dressler et al. (2022) that predicted that the asymmetrical speech situation in PDS would be similar to nonverbal IDS. Just as predicted, CDS and ADS where speakers actively participated in conversations, had different distribution of morphopragmatic markers than PDS and IDS. Therefore asymmetry in communication was reflected on the morphopragmatic density of address terms in Turkish."

Effects of language input and environment

07/18/2024

EVERY DAY MATH TALK : A STUDY WITH WICHI AND SPANISH-SPEAKING FAMILIES

Andrea Taverna; Analía Salsa

The influence of culture on mathematics is well established, but almost nothing is known about how different practices and languages in different cultures influence young children's earliest mathematical knowledge and skills. In the present study, we report an analysis of 3989 utterances recorded at home in two diverse cultural settings in Argentina: two monolingual Wichi and two Spanish-speaking 2-year-old children and their families. A set of math talk categories was developed: Numeracy (labeling, enumeration, quantification, ordinal numbers,

fractions), Geometry (space and shape), and Measurement. Although the overall frequency of utterances was similar in both cultural groups, Spanish-speaking dyads produced twice as many mathematical utterances as their Wichi counterparts. More precisely, in the Spanish-speaking families, utterances about numbers were more than twice as frequent as utterances about geometry and measurement, with quantification (focusing on exact and global cardinal values) clearly predominating. In the Wichi families, on the other hand, utterances about space predominated, due to the wealth of spatial demonstratives in the language, which are morphemes attached to nouns with a deictic function (they indicate the position, distance, orientation of the referent). In numeracy utterances, we registered the use of two differentiated systems of global quantifiers ('little, much') for continuous and discrete quantities, especially for liquids, semantic distinctions that are not lexicalized by Spanish quantifiers. Moreover, in Wichi families, math talk was produced spontaneously by children, whereas in Spanish-speaking families it was produced by parents and siblings as child-directed speech. In this way, family practices and languages enable the appropriation of informal mathematical knowledge, but with a focus on different domains of early mathematics in different cultural groups.

Effects of language input and environment

07/18/2024

Variations in Maternal Language Input to Bilingual Children: Considering Early Language Delay Status

Lauren Cycyk; Stephanie De Anda

Maternal language input quantity and quality is consistently linked to child language development before age 3 (Head Zauche et al., 2016). Young children who experience frequent, responsive, sensitive, positive and that includes diverse and complex language consistently demonstrate stronger early language skills than their peers (e.g., Hirsh-Pasek et al., 2015; Rowe, 2008). Wide variations in the language input in mother-child interactions exist but research is needed to understand factors that influence this variability. Early language delay, which impacts upwards of 20% of young children (Law et al., 2000), may be one crucial factor. According to the transactional theory of language development (Camarata & Yoder, 2002; Sameroff, 1975; 2009), children with early language delay are less likely to receive frequent and high-quality maternal language input. While a small body of research has confirmed that mothers of monolingual children with early language delay provide less input quantity and quality compared to mothers of children without early language delay (Bondurant et al., 1983; van Balkom et al., 2010; Vigil et al., 2005), this finding has not been replicated multilingual children. Thus, this presentation will describe how maternal language input varies for 70 Spanish-English exposed toddlers (Mage = 24.8 months) by their early language delay status. Data on maternal input were collected during a 10-minute semi-structured free play interaction that was coded for input quantity (number of words and utterances), linguistic quality (number of different words, mean length of utterance, sentence diversity), and interactional quality (using the Parenting Interactions with Children Checklist of Observations Linked to Outcomes; Roggman et al., 2013). Half of the participating toddlers presented with early language delay due to having a total expressive vocabulary <50 words and no word combinations per maternal report. Understanding variability in input to children with and without delays helps inform theories of language acquisition.

Effects of language input and environment

07/18/2024

Using poetry to support trilingual and biliterate language development of young children

Catherine Wong

"'Poetry is a bridge that connects children to the relevance of writing, reading, learning, honesty and community. Passage on this bridge is open to all children and successful crossings are guaranteed… because poetry writing relies on the senses, emotions and history of each child' (Tucker, 2004). This study examined the use of children poetry (verses, poems and songs) in the Hong Kong Schools Speech Festival's Solo Verse Speaking Competition over three years at the Nursery and Primary 1-3 Levels, across English, Mandarin, and Cantonese languages. Various poetic features, such as metaphors, similes, personification, imagery, alliteration, onomatopoeia, and repetition, were analysed, along with the comment sheets written by adjudicators. The festival is one of Hong Kong's largest inter-school competitions, with over 110,000 students participating in 2022. The study highlights the importance of poetry in language and literacy development, and the potential benefits of introducing children to poetry and songs from an early age. By examining the use of poetry in a large-scale competition, the study provides insights into the role of poetry in language learning and the potential benefits of incorporating poetry into educational programmes offered to young children, aiming to enhance their language development.

The preliminary results of this study show that the use of poetry can aid in the trilingual and biliterate language development of young children. Young children learn about language through adults and older children around them, who provide models and encouragement for them to become confident communicators. When children are exposed to well-written poetry from an early age, it can embed itself into their developing language and emerge orally and in writing as they learn the technical skills to record and express their thoughts and ideas."

Effects of language input and environment

07/18/2024

How often do verbs co-occur with relevant events? Examining parent-child speech in Latin America

Jane Childers; Maria Chiroboga; Priscilla Tovar-Perez; Gemma Smith; Analena Castillo; Ana Maria Fernandez

"A key problem in verb learning is deducing how a verb refers to events. Yet no prior study has shown how often verbs and their referents co-occur. Mother-child dyads were observed to ask: how often do children say/hear verbs while seeing relevant events, or how often is word-to-world mapping possible?

In Study 1, two 45-60 minute interactions between monolingual Spanish-speaking dyads were videotaped (n= 12 in Guatemala City,Guatemala or Santiago,Chile; 19-36 months,Mage= 28m), and transcribed by fluent Spanish speakers. Coders then coded the exact time a verb was said and whether a relevant action was present; only action verbs that could be seen (e.g.,'pintar'/"to paint") were included. To adjust for talkativity, total number of relevant events was divided by total number of verbs. For children, the average rate of events co-occurring with action verbs was 17% (ave.prop.verb= .17, SE= .05), which was similar to parents', 16% (ave.prop.verb= .16, SE = .04); combining these, children said or heard action verbs while seeing relevant events approximately 1/3rd of the time(33%).

To ask whether these results extend to other languages/cultures, these procedures were repeated with a similar U.S. sample (n= 12, in Austin, Texas; 23-36 months, Mage= 29m). These data show a similar percentage of verbs linked to relevant events. Specifically, for children, the average rate of verb+event was 16% (ave.prop= .16; SD=.09), which was similar to parents' 18% (ave.prop=.18; SD=.06). Thus, as found among Spanish-speakers, relevant events co-occurred with verbs about 1/3rd of the time (34%).

In sum, in two languages/cultures, we found verbs were heard in non-referential contexts often (66% of the time). This is important because there is no prior data concerning how often verbs and events co-occur in speech. Theories and empirical studies rely on relevant events while these data show these events are less common in everyday contexts."

Effects of language input and environment

07/18/2024

Exploring the Temporal Distribution of Words in Daylong Audio Data using the Burstiness Metric

Zeynep Marasli; Jessica Montag

Correlational studies clearly link aspects of a child's language input with language development. These studies are often agnostic to the mechanisms that link language input with learning outcomes. Applying classic learning principles to the distributions of words in language environments, we aim to bridge this gap to understand how language input maps to learning outcomes. In many new and classic learning theories, the temporal distribution of training items (i.e., spaced/ massed, blocked/interleaved presentation) has measurable effects on learning. The temporal distribution of words in naturalistic speech may play an analogous role in language development. In the present work, we explore operationalizing this temporal distribution using the burstiness metric. Burstiness is used in complex time series analyses for many applications, but is less applied in child-directed speech, primarily due to a lack of appropriately transcribed data. Using four timestamped and fully transcribed daylong audio recordings, we quantify and explore the burstiness of individual words, particularly to tease apart burstiness from frequency. Frequency and burstiness values of words were fitted to a negative exponential function. High frequency words are nearly uniformly high in burstiness, but low-medium frequency words present a wide range of burstiness values. When categorizing words by part of speech (nouns, verbs, all other types), nouns presented the lowest median burstiness, followed by verbs and all other parts of speech. Additionally, burstiness values varied across and within semantic categories of words (using MBCDI groups). These initial analyses show that while there is an apparent relationship between frequency and burstiness, the two are dissociable. Burstiness exhibits substantial variability and may be an informative measure in linking language environments with important principles in learning theories. Follow-up analyses will further

characterize burstiness in daylong data and is a foundational step in linking theories of learning to the relationship between language input and outcomes.

Effects of language input and environment

07/18/2024

The development of English postpositive adjectives. Data from child and adolescent corpora.

Luca Cilibrasi; Pavlina Saldova

While in English the canonical position for adjectives is before nouns, the so-called "postpositive adjectives" may appear after nouns as well. This study presents a corpus analysis of postpositive adjectives reported in caregivers' speech in the English subset of the Childes corpus. Based on previous work, three adjectives were chosen for investigation due to their flexibility in positioning: available, possible and necessary. The study shows that for all these three adjectives, postpositive order (i.e. money available) has a frequency that is similar to the one obtained for the same adjectives when used in attributive order (i.e. available money), and both these uses are significantly less common than predicative use (i.e. money is available). The analysis shows that as early as the age of 1, children are presented through their caregivers to a substantial number of postpositive adjectives, which leads to their understanding that the prototypical position for adjectives (before nouns) may be violated. In addition, the study includes a qualitative analysis that describes the contexts in which postpositive adjectives occur within the Childes corpus by caregivers (use by children is at floor) and a qualitative analysis of the same adjectives as used by adolescents in the Corpus of London Teenage Language. Interestingly, adolescents appear to consistently prefer predicative use of these adjectives, indicating that despite the exposure to non-canonical order in earlier years, a preference for canonical structures is displayed in that age range. Theoretical implications of this finding are discussed: on the one hand, the prevalence of non-canonical adjective placement in caregiver speech challenges traditional assumptions about adjective ordering in English, giving new insights into the notion of canonicity in child-directed speech. On the other hand, this research sets a foundation for future investigations into the extent to which canonical adjective orders influence children's and teenagers' language production.

Effects of language input and environment

07/18/2024

A day in the life of 12 toddlers: how does parent input vary across activity contexts?

Caitlin Holme; Yvonne Wren; Sam Harding; Sue Roulstone

"Limited research has investigated the influence of activity context on interaction between parents and children. Existing studies have often used structured, researcher-directed contexts, which limits ecological validity. More recently, interaction during real-life activities has been investigated using naturalistic daylong recordings. However, recordings have not been combined with qualitative data to understand parents' views about their child's activities. This is important, as parental input to children varies according to what parents perceive as the purpose of the activity. The study presented investigated variation in parental input across activities, using a novel combination of audio recordings and qualitative interviews.

Twelve typically developing children aged 2 ½ - 4 years old and a parent participated in the study. Recruitment targeted diversity in terms of SES and cultural background, although all children lived in the UK and were English-speaking (7 children also spoke an additional language). Children's interactions at home over the course of one day were recorded using an automated recording device. Their parent was then interviewed about the day's activities and their interactions.

Automated recording data showed variation in adult word count (AWC) across the day. Information from parent interviews was used to code the activity context for each extract. The activity with highest AWC was reading, followed by general play and structured play. The lowest AWC occurred during travel, outdoor play and outdoor visits. Parent interviews illustrated the challenge of coding activities, as often multiple activities happened at the same time. In addition, there was variation in terms of the meaning of the activity for different families, especially in relation to play, reading and media consumption.

Quantitative results corroborate previous findings about which activities lead to increased parent input, however qualitative results provide a broader picture about the diversity of children's activities and interactions in real-life contexts."

Effects of language input and environment

Language difficulties in children and young people in care aged 5 to 14 years

Sevil Savi-Karayol; Gary Morgan; Nicola Botting

"Background: It is recognised that children and young people in care (aka, looked-after children and young people - LACYP) persistently demonstrate poor developmental trajectories in many areas, including their language (Krier et al., 2018; O'Higgins et al., 2015; Bazalgette et al., 2015). It is also established that their poor life trajectories are influenced by their pre and in-care adverse life experiences (Coman & Devaney, 2011; Mathers et al., 2016; Aguilar-Vafaie et al., 2011; Jones et al., 2011). But to date, the language difficulties of the LACYP population have not received much attention, which may leave this population to live with undetected language difficulties throughout their life span. The current study thus explores the language difficulties in children and young people in care in the broader context, including the link between their educational attainment and social, emotional behavioural difficulties.

Method: A mixed methods design was used, with the qualitative strand providing complementary and explanatory data to the quantitative strand. The quantitative dataset was from an inner London borough, involving n=78 LACYP (aged 5-14) who resided in various out-of-home-care settings. A thematic analysis of interviews with n=31 professionals was conducted to provide supplementary data regarding language difficulties in this population.

Outcomes & Results: The study found that LACYP are at a higher risk of having poor language skills across all aspects of language, including social pragmatics and verbal cognition. Further findings suggested that LACYP with language difficulties are at risk of having poor educational, social, emotional and behavioural outcomes.

Conclusion: Findings suggest that early speech and language therapy assessments should be available to children and young people in care from the onset of their care experiences, with interventions implemented for those found to have language difficulties."

Effects of language input and environment

Question/answer pairs during shared book reading in French nursery schools

sophie kern

The input plays an important role in the child's language development. Much work has been devoted to the characterization of verbal stimuli received by children in their family or in class, but very little to the input that children are exposed to in nursery schools. This study examined the sequential relations between the question addressed by the educators to the children and the children's responses. 100 sessions of shared book reading in 36 French nursery schools were video-recorded, transcribed and coded. The 747 questions addressed to the children by the educators were analyzed in terms of form (open vs closed questions), and pragmatic focus (label, verb argument, sentence…). The length as well as the accuracy of the 683 responses given by the children were analyzed according to the different question types. Only 12% of adults' utterances were questions to which children respond only in 62,9% of cases. Open questions, which were as frequent as closed ones obtained more responses (67% versus 54%).The analysis of the wording of the children's answers showed that closed questions were almost all answered by an isolated word among which two third was yes or no. The answer to the open questions were more diverse and morphosyntactically more complex but not significantly from the answers to the closed questions. Moreover, concerning the focus of the open questions, 40% were on label, 28% on adverbials, 20,5% on verb argument and only 10% on predicate or sentence. Among the answers, one third is not accurate with mainly semantic and pragmatic errors. In fine, a part of the input that children benefitted of from in the nursery school could have be more supportive of children's production during book reading: the use of questions could be more frequent and the type of questions could encourage more complex and diversified answers.

Effects of language input and environment

Normalising partnership working between speech and language therapists and childhood educators

Helen Sringer; Eva Gilmour; Di Nicholson; Kate Hope

"Background

Following a two year research study to introduce universal, targeted and specialist speech and language interventions into the early years provision of five schools in the north east of England, long term monitoring revealed sustained change in practice. In particular, speech, language and communication remained explicit priorities for senior leaders, teaching assistants (TAs) were developing innovative ways of monitoring children's progress to inform the speech and language therapist's goal setting and less specialist input was required to obtain the same outcomes. This new way of working was now normalised into everyday practice. Partnership working across organisations was evidently a key component in normalisation. To establish what the other important components were, we investigated the perception of senior leaders and staff on the ground.

Methods

Fifty structured interviews were conducted with staff across the educational settings and the speech and language therapy service. Participants comprised senior leaders, speech and language therapists, class teachers and TAs.

Tools of behavioural science in the form of the Theoretical Domains Framework (TDF) and the Capability-Opportunity-Motivation-Behaviour (COM-B) Model were used to analyse the interview content. Themes were extracted using the TDF and mapped onto the COM-B model as barriers and enablers.

Results

Clear organisational policy empowered staff to develop their practice. That speech, language and communication support for children was valued by staff at all levels of the organisations was highlighted as a key component in normalisation. Staff felt supported to develop knowledge and skills which increased their confidence in supporting children. Limited to time and resources were still an issue but did not seem to impact on normalisation.

Conclusion

Normalisation of partnership working to provide speech, language and communication support to children in educational settings was achieved through embedding in organisational policy, valuing and supporting staff, providing well focused training and expert specialist support."

Effects of language input and environment

07/18/2024

Linkage between teacher questioning and child responsiveness in shared-book reading

Yan Peng WU; Chang Liu; Zifei Liu; Peijing Qiao; Xuerong Wang; Si Chen

Teacher-child shared-book reading is an everyday activity that has implications for preschooler's oral language boost and reading skill development. Previous research has well investigated teacher's interaction strategy from multifaceted aspects. Little research, however, has specifically looked into teacher's extratextual questioning in Chinese context, and the relationship between the thematic contents of teacher's questions and children's talk productivity is still underexplored. This study thus examines how the patterns of teacher questions that are based on texts versus based on life experience affect the responsiveness of children aged 3 to 6. A total of 89 dyads of teacher-child talk during 2 shared-book reading activities on different themes were videotaped and transcribed. Talk features (amounts of utterance, token type ratio, mean length of utterance, etc.) of both teachers and children were analyzed using the software CLAN. Teachers' questioning was further coded by type (open-ended and close-ended) and content (text-based, life-experienced-based, and other), while children's responsiveness to targeted questions was classified by no response, nonverbal response, and verbal response. Children's vocabulary knowledge was also independently assessed via testing instruments including Chinese PPVT and EVT. The results show that teachers' abundant use of life-experienced-based questions can significantly predict the mean length of utterance in children's speech (including the amount of children's utterance, morpheme, and the ratio of morpheme over utterances), and such a prediction remains with control of children's vocabulary scores, age, the quantity of teacher's questions, and teachers' type token in their utterance. Teachers' text-based questioning is also correlated with children's talk productivity, the prediction over which, however, could not be yielded from the text-reading utterances in the shared-book reading. The findings highlight the benefits of the content of questioning, especially life-experienced-based questioning, for children's language development and oral production in the interaction during the shared-book reading.

Effects of language input and environment

07/18/2024

Contexts of Language Learning: Predicting Child Language by Interactive Speech

Olivier Rüst; Marco Baroni; Sabine Stoll

"Recent research suggests that socio-interactional contexts are more predictive for language acquisition than quantity of child-directed speech (Donnelly & Kidd, 2021). How the underlying learning mechanism looks like, however, is largely unknown.

We hypothesize that interactive adult speech is a better predictor for child speech than non-interactive adult speech. We propose two underlying mechanisms: In interactive speech (1) children are more engaged, which renders them more receptive to novel information and (2) adults accommodate more, which facilitates information extraction. We show the results of four Chintang children (2;1-4;4, Sino-Tibetan) (Stoll et al., 2015) and their surrounding adults. This corpus contains transcriptions of recordings taken over 2 years in their natural rural environment.

In Study 1, we first cross-sectionally train separate neural language models (LSTMs) on adult interactive and non-interactive utterances, to evaluate predictability of child utterances. Second, we longitudinally predict later child utterances by earlier interactive vs. non-interactive adult utterances. Model performance is evaluated with perplexity. We find that child utterances are better predicted by adult interactive utterances via Bayesian multilevel models (Cross-sectional: β=1.41, CI : 1.16,1.65, Longitudinal: β=1.62, CI: 1.25,1.98). This indicates that children are more likely to learn language in interactive moments in their everyday life.

In Study 2, we profile interactive vs non-interactive adult speech via seven measures: predictability of words, bigrams and speaker, number of types, tokens and speakers, and MLU. We hypothesize that adult interactive speech is less complex than non-interactive speech (Elmlinger et al., 2021). We find that interactive adult speech has higher predictability of words, bigrams and speaker, fewer types, tokens and speakers and shorter MLU. We take this as evidence that adults accommodate more to children in interactive contexts, facilitating information extraction.

Our results show that children learn more from adult interactive speech, which is adapted for information extraction"

Effects of language input and environment

07/18/2024

Interdisciplinary and intercultural development of an early literacy app in Dhuwaya

Jill Wigglesworth; Yalmay Yunupingu

"Phonological awareness is a skill which is crucial in learning to read. In this paper we report on the linguistic challenges encountered while developing an app for teaching phonological awareness and early literacy skills in Dhuwaya, a kione Yolngu Matha dialect spoken in the remote northeast of Arnhem Land. Dhuwaya is the first language of the children who attend a bilingual school in which Dhuwaya and English are the languages of instruction.

Dhuwaya and English have different phonemic inventories, and different alphabets. The Dhuwaya alphabet is based on Roman alphabet symbols and has 31 graphemes (compared to 26 in English) because Dhuwaya has a wider variety of place of articulation contrasts compared to English (e.g. retroflexes and palatals).

The app was designed to teach children how to segment and blend syllables and phonemes, and to identify common words as well as suffixes used in the language. However, the development was not straight-forward, and the impact of the linguistic challenges could not have been predicted. Amongst these was the inherent variation in the language, particularly where glottal stops were concerned and the pronunciation of stops more generally, the focus on syllables as a decoding strategy for literacy development, difficulties with one syllable words which are initially those used with English speaking children, but of which there are a limited number in Dhuwaya. Another challenge was identifying culturally appropriate images which the children could relate to and which were not copyrighted.

In this paper we discuss these plus a range of other language issues that emerged, identifying how these problems were addressed and resolved by the interdisciplinary and intercultural team. The children were also tested using a pre and post-test after the introduction of the app in the classroom and we discuss these results and how the children's increased phonological awareness progressed."

Language and literacy, dyslexia and language

07/18/2024

Come Out, Come Out, Whatever You Are: Onset Segmentation of Bilinguals across Educational Contexts

Himilcon Inciarte

"Research Questions:

RQ1: In terms of Spanish onset segmentation, what characteristics explain between-item variance?

RQ2: How does the performance of children in English-only settings compare to that of their counterparts in Spanish/English educational programs, controlling for grade level and language spoken at home?

RQ2: Is there differential item functioning due to educational context?

Methods:

82 kinder through second-grade students were assessed using 28 Spanish syllables; 38 were enrolled in an English-only program.

First, an item-explanatory model with correct onset segmentation as the dependent variable was fitted with persons and items as random effects. Item predictors included: syllabic structure, initial stop, initial sonorant, unvoiced stop, presence of tapped r phoneme, and 5 psycholinguistic variables (syllabic frequency; age-of-acquisition; phonotactic probability; neighborhood density; neighborhood frequency).

Next, a person-explanatory model was fitted with educational context (English-only or Dual Language); grade level; and home language (English; English and Spanish; Spanish).

Finally, a model was fitted with a new outcome variable where 1 represents minimal-pair phoneme substitution (e.g., "do" instead of "to"). This doubly explanatory model included the aforementioned predictors and two interactions: educational context X unvoiced stop; educational context X r phoneme.

Results:

Results suggest that onset structure, number of stop phonemes, phonotactic probability, and age-of-acquisition explain nearly all the between-item variance ($R2 = .97$).

The average student receiving English-only instruction significantly outperformed their DL counterpart ($\beta = 2.29$, $z = 4.64$, $p < .001$). However, the former was more likely to substitute phonemes ($\beta = 1.13$, $z = 3.97$, $p < .001$), especially unvoiced stops ($\beta = 1.92$, $z = 5.66$, $p < .001$).

Discussion:

These results suggest that students receiving instruction in English can apply their onset segmentation skills in Spanish. However, the phonemes they perceive are sometimes more ambiguous. This finding raises questions about the role of literacy acquisition on speech perception."

Language and literacy, dyslexia and language

07/18/2024

Difficulties in reading fluency persists up to 11 years of age in Finnish children born very preterm

Eveliina Joensuu; Petriina Munck; Anna Nyman; Sirkku Setänen; Päivi Rautava; Suvi Stolt

"Background and aims: Children born very preterm (VP, <32 gestational weeks and/or birth weight ≤1500 g) are at increased risk for learning difficulties including problems in reading. More knowledge of the specific skills of reading is needed in these children. Main aim was to investigate the reading fluency and reading comprehension of children born VP speaking phonologically transparent language.

Methods: A total of 134 11-year-old monolingual Finnish-speaking children born VP were assessed for reading fluency and reading comprehension using the subtests of the Finnish Standardized Reading test for Primary School. Cognitive development (full-scale IQ) was evaluated using the Finnish translation of WISC-IV. The analyses were run separately for all children born VP and for children born VP without severe developmental problems (full-scale IQ <70, cerebral palsy, severe hearing impairment or blindness).

Results: Children born VP had statistically significantly more problems in reading fluency compared to the normative data of the reading test (weak skills 51%; average skills 39%; above average skills 8%; respective percentages for the normative data: 23%/54%/23%, $p <0.001$, Chi2=45.6, df=2). In reading comprehension, no

statistically significant difference between the groups was found. However, after the exclusion of the children born VP with severe developmental problems, the difference between the groups was statistically significant (better in children born VP; weak skills 17%; average skills 47%; above average skills 36%; respective percentages for the normative data: 23%/54%/23%, p<0.007, Chi2=9,9, df=2).

Conclusions: Findings of the present study provide further specific information on reading skills in children born VP. Over half of the Finnish-speaking children born VP had difficulties in reading fluency. On the contrary, reading comprehension was even better among VP group compared to the normative data. The results indicate the importance of monitoring and supporting the reading skills of children born VP throughout the primary school."

Language and literacy, dyslexia and language

07/18/2024

Reading comprehension in French-speaking bilingual and monolingual adolescents

Aude Laloi; Jeanne Bodin; Louise Prieto; Peggy Gatignol; Stéphanie Borel

"This study explores reading comprehension in early-successive bilingual adolescents in their second language (L2), compared to monolingual peers. It aims to seek differences between French L2 adolescents and monolinguals peers in reading comprehension, and assess the reliability of monolingual tests in identifying comprehension reading disorders in bilinguals.

A total of 27 French-speaking bilinguals and 22 monolinguals (average age: 12;5) were assessed in phonological processing, reading decoding, oral language and reading comprehension skills. Both groups were seventh-grade students, matched on age, gender, socio-economic status, and non-verbal abilities. Bilinguals had been exposed to French since age 3 when entering preschool. Tasks included phonological processing, word and text reading speed and accuracy, sentence and text reading comprehension, picture-naming and spoken sentence comprehension. All tasks were part of the French battery EVALEO 6-15, which provides French national norms.

Results show that bilinguals had a more limited French vocabulary than monolinguals but similar performance in phonological processing, reading decoding, and oral morphosyntactic comprehension. In reading comprehension, differences emerged depending on the task: bilinguals were less accurate than monolinguals in sentence comprehension but read them at a similar speed. Conversely, they were slower than monolinguals at reading a text but achieved similar comprehension outcomes. Reducing reading pace emerged as an effective strategy that bilinguals only used when seeking contextual cues to repair reading comprehension breakdowns stemming from L2 lexical and syntactic weaknesses. Bilinguals did not use this strategy for sentence-level reading comprehension, which rely on complex syntactic skills that contextual cues searching cannot compensate for.

Clinically, a higher proportion of bilinguals than monolinguals scored below the 7th percentile clinical cutoff for text decoding, reading comprehension and oral proficiency, but not for word decoding or phonological processing. Monolingual norms may reliably identify decoding and phonological deficits in bilinguals but not deficits in reading comprehension and oral language."

Language and literacy, dyslexia and language

07/18/2024

Autistic and neurotypical child-to-caregiver alignment in a cooperative task

Grace Corrigan; Riccardo Fusaroli; Ethan Weed; Deborah Fein; Letitia Naigles

"Linguistic alignment refers to the reuse of a conversation partner's lexical items (LexAlign), syntactic structure (SynAlign), and/or semantic content (SemAlign). Alignment during a cooperative task may improve task performance in neurotypical (NT) adult dyads (Dideriksen et al., 2022). Though studies have shown that autistic and NT children align similarly in highly-structured lexical games (with an experimenter; Branigan et al., 2016) and naturalistic conversation (with other children; Hopkins et al., 2014), little research has investigated autistic children's alignment with caregivers, or during a cooperative task. Here, we examine autistic and NT child-to-caregiver alignment in this understudied context.

22 NT (M(age)=15.78yrs) and 16 autistic (M(age)=17.27yrs) participants played the laptop-based Aliens Game (Tylén et al., 2016) with a caregiver. Dyads conferred on whether to ask for a gem, steal one, run away, or hide

from each of 40 aliens. Their conversations were recorded, transcribed, and analyzed using ALIGN (Duran et al., 2019).

Mean child-to-caregiver alignment rate (number of a speaker's turns in which any LexAlign/SynAlign occurred, divided by their dyad's total turns) and level (mean LexAlign/SynAlign/SemAlign value) were analyzed by group. Because SynAlign and SemAlign are heavily influenced by LexAlign, we controlled for LexAlign in analyses involving SynAlign/SemAlign.

Both groups' child-to-caregiver LexAlign/SynAlign/SemAlign levels were comparable to NT adults' LexAlign/SynAlign/SemAlign levels reported in Dideriksen et al. (2022). No group differences in any alignment measure emerged (ps>.285). We also investigated whether any alignment measures correlated with Aliens Game performance (total score & percent correct). In the autistic group only, SynAlign level positively correlated with both measures (rs>0.68; ps<.008), over and above participants' mean length of utterance.

These results corroborate previous findings that autistic and NT children equivalently align. Notably, alignment (SynAlign level) related to task performance only in the autistic group. Rigorously following caregivers' syntactic structure appears to benefit autistic teens by keeping them on-task."

Language in other neurodevelopmental conditions

07/18/2024

Precise auditory processing and language performance in autism spectrum disorder

Kwok Ho So; Carol Kit Sum To

Growing evidence suggests precise auditory processing, the ability to perceive subtle differences in auditory parameters such as amplitude rise time and duration, underpins speech processing and therefore language acquisition. Deficits in the processing thus pose risk to developing language disorder. Previous study showed that deficits in precise auditory processing has been implicated in developmental language disorder, but whether the same aetiology underlies language disorders associated with other developmental disabilities is unknown. Aetiologies underlying language disorder in autism spectrum disorder have drawn much discussion. There is disagreement on the presence of distinct aetiologies for their language disorder. Enhanced perception theory suggests, as distinct from developmental language disorder, autism spectrum disorder has enhanced auditory perception. Deficits have been inconsistently reported but might be parameter-specific. This study therefore aims to assess the profile of precise auditory processing skills in autism spectrum disorders and its contribution to language performance. Individuals aged 8 to 12 with autism spectrum disorder and their age-matched typically developing peers will be recruited. Thresholds for the detection of amplitude rise time, frequency and duration differences will be assessed using an auditory judgement task with a staircase method. Language abilities and non-word repetition will be assessed. Precise auditory processing ability of autism spectrum disorder will be compared to their peers. The association and contribution of auditory processing to language performance will be investigated. It is hypothesized that individuals with autism spectrum disorder have deficits in perceiving durational change but lowered thresholds for other parameters and the deficits contribute to the language performance. The study can reveal the contribution of auditory processing deficits in the aetiology for language disorder associated with autism spectrum disorder and whether there are etiological overlaps with developmental language disorder. It also elucidates whether intervention in auditory processing is indicated for autism spectrum disorder.

Language in other neurodevelopmental conditions

07/18/2024

Dissociation between narrative microstructure and macrostructure in Down and Williams syndromes

Eliseo Diez-Itza; Maite Fernández-Urquiza; Verónica Martínez; Viejo Aitana

"Introduction: Down syndrome (DS) and Williams syndrome (WS) are genetic neurodevelopmental disorders characterized by contrasting language profiles. Lexical and grammatical skills constitute a weakness in DS and a strength in WS. Conversely, pragmatic competence is a strength in individuals with DS and a weakness in WS. The aim of the present study was to explore if an association between the grammatical and lexical levels of the microstructure in oral narratives and the levels of the macrostructure (global, integrated, and detailed), as observed in typical development (TD), could be also found in DS or WS.

Method: Participants were divided into four groups of seven subjects (DS, WS, and two TD). One TD-group was matched on verbal age with the DS-group, and the other TD-group was matched on chronological age with

the WS-group. Narratives were elicited after watching a cartoon (Tom and Jerry). They were transcribed and analyzed with the tools of the CHILDES Project and the PREP-CORP Protocol. Analyses of the microstructure: productivity (tokens and utterances) and complexity (types and MLU); and the macrostructure: global (scenarios), integrated (episodes) and detailed (events).

Results: (i) microstructure: DS-group showed lower lexical and grammatical complexity than WS-group. (ii) macrostructure: DS-group and WS-group did not differ. (iii) associations microstructure-macrostructure: in chronological TD-group, lexical productivity and complexity and grammatical productivity predict all levels of the macrostructure; in verbal-age TD-group, lexical productivity predicts detailed structure, and grammatical productivity predicts global and integrated structure; regression models failed to show associations in both DS-group and WS-group.

Discussion: Relative strengths in pragmatic competence (narrative) were confirmed in DS, as well as strengths in lexical and grammatical complexity in WS. Dissociation between microstructure and macrostructure in DS and WS narratives was also observed, suggesting atypical asymmetries and asynchronies in the linguistic profiles of both syndromes, which is consistent with neuroconstructivist accounts."

Language in other neurodevelopmental conditions

07/18/2024

Functional Speech Sound Disorders in Slovene-speaking Children

Blažka Korun; Damjana Kogovšek; Tanja Antolík

Functional speech sound disorders, one of the most common paediatric speech disorders, consist of several subtypes differing mainly in the underlying impairment: articulation or phonology. The disorders have not been described yet in Slovene-speaking children and are consequently not well defined in clinical practice. Typically, the children are given a diagnosis of articulatory disorder, without any mention of phonology. The aim of this research was thus to investigate the subtypes of the functional speech sound disorders observed in Slovene-speaking children. 23 children, aged between 4;01 and 6;09 years, participated in the study. They were at the start of a speech therapy intervention following a diagnosis of a speech disorder. Two tests were used for speech evaluation: a three-position articulation test and a test of phonological processes. The outcomes allowed detailed description of phonetic inventory and phonological processes, as well as classification according to a commonly used differential diagnosis model. Of the 23 children, one had an articulation disorder, four had a combined phonological-articulation disorder, and 18 had a phonological disorder. According to the differential diagnosis model, eight children showed a phonological delay (including one with an associated articulation disorder), 12 a consistent phonological disorder (one with an associated articulation disorder), and two an inconsistent phonological disorder (both with an associated articulation disorder). Although based on a small sample, the results confirm the presence of different subtypes of the investigated disorder in Slovene-speaking children, as well as the suitability of the applied differential diagnosis model. The study additionally serves as a motivation for further research in the field of phonological development and functional speech sound disorders in Slovene and can lead to improved differential diagnosis and to the use of standardized terminology in clinical practice.

Language in other neurodevelopmental conditions

07/18/2024

Budding metaphors: input-output effects in metaphor production

Dorota Gaskins; Gabriella Rundblad

"This paper presents a longitudinal analysis of input-output effects in the acquisition of metaphoric expressions by six English-speaking children and five Polish-speaking children aged two to five, analyzed by means of a novel metaphor identification procedure (Gaskins et al., 2023). The small pool of core primary metaphors that both English and Polish children prioritized in their early acquisition around the age of two was remarkably similar, with a large proportion reflecting the mappings ACTION IS MOTION, MORE IS UP and TIME IS SPACE. However, the cross-linguistic similarities in primary metaphor use were moderated by language type: in English, which is more analytic, the metaphor ACTION IS MOTION was encoded in the verb (e.g., Come on), while in Polish, which is more synthetic, it was attached to a range of verbal prefixes, thus generating more nuanced interpretations of the same notion (e.g., Zaśpiewaj 'start singing'). These cross-linguistic findings would seem thus to support the notion that metaphor acquisition is a fairly universal process.

However, a closer inspection of the input reveals that the metaphors prioritized in development are those that reach top frequencies in caregiver speech, which would suggest that child-directed speech plays a major role in

their acquisition. The 169,012 metaphors identified in the corpora demonstrate that metaphor frequencies in child-directed speech affect not only the acquisition of resemblance metaphors, which capture analogies between two entities (e.g., You're my treasure) but also conceptual metaphors which bring abstract concepts and processes closer to our sensory experience (e.g., She is a warm person). This, in turn, challenges Conceptual Metaphor Theory, which highlights that metaphors are acquired predominantly through embodiment (Lakoff & Johnson, 2008). A new usage-based theory of metaphor acquisition is put forward which reconciles both sensory and linguistic input as the main contributors to metaphor development."

Typical first language acq.: narrative, pragmatics, discourse

07/18/2024

Narrative abilities of Ukrainian new immigrant children in their native language and Estonian

Andra Kütt-Leedis; Reili Argus

"Previous research has indicated that bilingual children exhibit similarities to their monolingual peers in second language (L2) narrative skills related to story structure, emotional characterization of characters, and metacognitive statements (Pearson 2002; Uccelli, Paz 2007). However, there appears to be limited transfer of lower-level linguistic categories, e.g., vocabulary and morphosyntax. Interestingly, bilingual children have been found to surpass monolinguals in certain narrative skills, e.g., perspective-taking and meta-awareness of the intentions and emotions of protagonists (Chen, Yan 2011). Berman (2001) suggests that children, irrespective of linguistic backgrounds, share common narrative conceptualization strategies but differ in linguistic competence (lexical and morphosyntactic), affecting their storytelling proficiency.

The current study seeks to challenge these assertions and explore the influence of narrative skills in children's first language (L1) on their skills in their L2. The study assesses disparities at both macro- and micro-levels based on narratives produced by Ukrainian children in their L1 (Ukrainian) and L2 (Estonian).

The MAIN test, administered in both Ukrainian and Estonian, was conducted with 20 Ukrainian refugee children aged 13-15 who had been learning Estonian for at least 1.5 years in Estonia. The study compared macro-structural scores (assessing story components) and micro-structural scores (evaluating language aspects, e.g., vocabulary size and the use of different morphosyntactic patterns) in the children's L1 and L2 narratives.

The results indicated a strong correlation between macrostructure scores in the children's L1 and L2 narratives. Regarding micro-structure, high vocabulary scores in L1 narratives suggested higher vocabulary scores in L2 narratives. However, there were extensive individual differences in the use of different morphosyntactic patterns in L1 and L2 narratives, and clear correlations between narratives in the two languages could not be identified. An analysis of morphosyntactic patterns revealed differences between Ukrainian and Estonian, which are typologically distinct languages, as well as the influence of pragmatic factors."

Typical first language acq.: narrative, pragmatics, discourse

07/18/2024

Theory of Mind and Working Memory as Predictors of Pragmatic Development

Francesc Sidera; Elisabet Serrat; Alaitz Intxaustegi; Anna Amadó

"Deaf and hard of hearing (DHH) children are at risk of both pragmatic and Theory of Mind (ToM) delays (Szarkowski et al., 2020). While pragmatic difficulties may be related to ToM impairments, working memory (WM) is also relevant for social communication (Baixauli-Fortea et al., 2017). Relatedly, the aim of the present study is to understand the relationships between ToM, WM and the pragmatic development in DHH children.

A total of 24 children between 8 and 12 years (M = 9.56; SD = 1.41) with bilateral hearing loss (from mild to severe) participated in the study. They attended mainstream schools and used only oral language. Most children had at least 1 cochlear implant (56.2 %). Their mean age of hearing loss detection was 24.39 months.

Children were administered two 2nd-order false-belief (2OFB) tasks, a visual WM task and a verbal WM task. Apart, children's speech therapists responded to the Pragmatics Profile of the CELF-V.

Results showed that only the visual WM task correlated with the scaled score of the Pragmatics Profile (rs = .498; p = .015). On the other hand, 2OFB understanding correlated with a section of the Pragmatics Profile called Rituals and Conversational Skills (rs = .405; p = .049). This section also correlated with the visual WM task (rs = .647; p < .001) and with the verbal WM task (rs = .615; p = .002).

The findings support the view that pragmatics and ToM do not completely overlap (Bosco et al., 2018). Moreover WM was very much related to the pragmatic skills of DHH children, similar to what was found before for ASD children (Baixauli-Fortea et al., 2017), suggesting that both ToM and WM skills need to be taken into account to improve the pragmatic skills of DHH children."

Typical first language acq.: narrative, pragmatics, discourse

07/18/2024

The Relation between Comprehension of Time Metaphors and Cognitive Flexibility

Sudenur GUNGOR; HALE OGEL BALABAN

Metaphor comprehension has been claimed to be related to cognitive flexibility, the ability to switch between cognitive tasks and think about multiple concepts simultaneously (Diamond, 2013). It is necessary to switch between literal and metaphorical meanings of expressions (Buttelmann & Karbach, 2017; Thota & Feltovich, 2003) and create mappings of analogies based on conversation (Deak, 2003; Mashal & Kasirer, 2011). The aim of the present study was to examine the relationship between cognitive flexibility and the comprehension of time metaphors in monolingual pre-schoolers. Twelve 3-, 18 4- and 22 5-year-old Turkish-speaking children participated in the Turkish Expressive and Receptive Language Test measuring language proficiency, the day/night task and the dimensional change card sorting task measuring cognitive flexibility, and one metaphor comprehension task adapted from Özçalışkan's studies (2004, 2005). Metaphor comprehension was measured with forced-choice comprehension and open-ended justification questions following each of 6 stories illustrating conventional or unconventional metaphors with cartoons. One-way ANOVA on the metaphor comprehension score calculated as the total number of correct answers to comprehension questions demonstrated the main effect of age, F (2, 49) = 4.41, p = .02, ηp2 = 0.15. Post-hoc comparisons showed that metaphor comprehension score of 5-year-olds (M = 5.55, SD = 0.86) was higher than that of 4-year-olds (M = 4.39, SD= 1.38) which was not different from 3-year-olds' score (M = 4.83, SD = 1.59). No significant correlation was observed between the metaphor comprehension score and the performance on cognitive flexibility tasks. On the other hand, the justification score calculated based on the relevance of children's answers to the justification questions to the meaning of metaphors was found to correlate positively with the day/night task score, r (52) = .34, p = .02. These findings were discussed in terms of the role of cognitive development in metaphor comprehension.

Typical first language acq.: narrative, pragmatics, discourse

07/18/2024

Developmental changes in phonological and semantic competition during spoken word recognition

Margarethe McDonald; Sama'a Salama; Bob McMurray; Tania Zamuner

As the lexical network of a child grows, the organization of phonologically and semantically related lexical items evolves which has consequences for spoken word recognition. Beyond just the size of the lexicon, children also become more adept at many skills, including executive function skills of inhibition which may be important to resolving lexical competition. This study aimed to examine how the time-course of phonological and semantic lexical competition changes through development. Currently, twenty-six children between ages 3-7 who began acquiring French from birth participated in a visual world eye-tracking paradigm. Children were presented with 4 images, each representing a different French word. One word was the anchor word (e.g., banana[banana]), one was phonologically related to the anchor word (e.g., baleine[whale]), one was semantically related to the anchor word (e.g., cerise[cherry]), and one was unrelated to all other words (e.g., épée[sword]). Data collection is ongoing. Competition was indexed by examining the difference in children's looks to the same phonological image on trials where they heard the anchor word versus trials where they heard the unrelated word. The same was done for the semantic images. Preliminary analyses do not reveal any significant differences in how younger and older children co-activated phonological and semantic competitors. However, there is a visual trend for older children to co-activate phonological competitors later in the time course than the younger children. The same trend was not visible for semantic competitors. If final results follow the visual trend, it would be surprising since initial hypotheses expected older children to become faster at activating phonological competitors. Hypotheses were based on findings using the same stimuli with French speaking adults, where those with more French experience showed more and early phonological competition. However, findings in adults only reflect differences in linguistic experience and not developmental differences that children also exhibit.

Typical first language acquisition: lexicon

07/18/2024

Finding Structure in Dance: an Event Segmentation Study

Claire Monroy; Laura Wagner

To learn action words like verbs, children must segment action sequences into discrete units that support linguistic labels. Research has shown that children, like adults, organize familiar activity into discrete units with consistent boundaries despite the dynamic, continuous nature of everyday events (Zacks et al., 2019). However, less is known about how children segment unfamiliar event sequences. In the current study, we exploited the novelty inherent in modern dance to examine event segmentation of novel sequences. Modern dance features natural human movement but lacks familiar, canonical goals like most everyday actions. Therefore, observers cannot recruit prior goal or object-related knowledge to segment dance. In two studies with children (Nstudy1 = 36; Nstudy2 = 43) and a comparison group of adults (Nstudy1 = 55; Nstudy2 = 50), we asked (1) whether children segment modern dance consistently, as they do for familiar events, and (2) the cues that children exploit to identify dance steps. Participants observed video stimuli of professional modern dancers performing four unique steps, while completing an event segmentation task in which they pressed a button whenever they perceived a dance step. Findings revealed that children do successfully identify some—but not all—of the dancers' steps. Overall, we found that segmenting these unfamiliar movement sequences was challenging for both children and adults. While adults benefited from being able to access top-down information, particularly linguistic information, children appeared to use bottom-up spatiotemporal information to segment the sequences. These findings revealed that children recruit different strategies to segment unfamiliar dance sequences, highlighting a developmental shift in the sources of information used to segment novel, non-goal-directed event sequences. We will discuss these findings in the context of the role of language in children's event perception and present ongoing analyses of children's production of labels during event segmentation.

Typical first language acquisition: lexicon

07/18/2024

Acquisition of new meaning in human infants and non-human great apes: a comparative study

Dahliane Labertoniere; Katrin Skoruppa; Klaus Zuberbühler

"Although fast-mapping abilities are essential for human language acquisition (Carey, 1978), there is a lack of empirical evidence for non-human apes. One documented case of fast-mapping in an animal (a border collie dog−see Kaminski et al., 2004) suggests that the ability does not seem to be specific to humans. In this study, we directly compare great apes with human infants in a fast-mapping eye-tracking task (a method that has been used successfully with great apes−see Kano et al., 2012). By using this comparative approach, we thus aim to gain a deeper understanding of the evolution of fast-mapping, and insight into the evolutionary history of communication at large.

We compare the ability to rapidly associate a novel sound to an object in human 19-month-olds and non-human great apes (gorillas and orangutans) using the same task. During the learning phase, two objects on a naturalistic background are presented with their sound label. During the test phase, both objects appear side-by-side with one label. Learning and test phases are repeated so that the subjects get up to 18 expositions to the novel associations depending on their interest.

We calculate the mean proportion of target looking (PTL) in pre- and post-naming phases in test phases and average it by subject. If subjects have learned to associate meaning to form, we expect a naming-effect to manifest as an increase in PTL in the post-naming phase. We were able to test 4 gorillas and 1 orangutan and are currently testing the same number of human infants. We expect children to be able to successfully learn the associations with fewer than 18 expositions (Schafer & Plunkett, 1998) and faster than apes (better attention span, easier testing conditions). We hope that our paradigm will be successful in unearthing the ability in non-human great apes."

Typical first language acquisition: lexicon

07/18/2024

The development of quantifying and temporal adverbs in child language; the complex case of Finnish

Minna Kirjavainen; Alexandre Nikolaev; Maija Surakka

"Recent studies on word learning have increasingly addressed the polysemic nature of language and how it affects the trajectories of language acquisition (e.g., Srinivasan & Rabagliati, 2021). Children typically learn words with single meanings earlier in development than semantically complex words. For example, their

knowledge and usage of nouns (as a group) develops quicker than that of verbs at least partly due to the fact that nouns are considered less polysemous than verbs (Catala et al., 2018). However, salience, usefulness and input also play an important part in word learning.

From the perspective of word learning and the role of polysemy, salience, usefulness and parental input in it, adverbs are particularly informative. This is because some adverbs denote a single meaning while others not only convey varying degrees of polysemy, but also express multiple inseparable/intertwined meanings allowing tests of the role of semantic complexity on the development of linguistic items. One such particularly complex adverb is the Finnish adverb VIELÄ. VIELÄ has a number of quantifying (e.g., more, also, in addition to) and also temporal meanings (e.g., yet, already, still). In addition to VIELÄ, Finnish has less polysemous adverbs denoting the same meanings as vielä (e.g., LISÄÄ ('more'), LISÄKSI ('in addition to'), MYÖS ('also') and JO ('already')).

We conducted a corpus analysis of one Finnish child's (Piia, Kirjavainen-MPI child corpus) densely collected corpus between the ages of 1;7 and 4;1 (approx. 260 hours of recording) investigating, from their earliest occurrences, the emergence and the developmental trajectories of VIELÄ and other adverbs denoting quantifying and temporal information, the extent to which this mirrored her maternal and paternal language and how the salience and usefulness impacted usage and emergence. We will discuss the results in the context of processes underlying word learning."

Typical first language acquisition: lexicon

07/18/2024

Dyadic combinations of infant behaviours and caregiver responses best predict later child vocabulary

Anika van der Klis; Caroline Junge; Frans Adriaans; René Kager

"Children show large individual differences in their vocabulary development which influence their socio-cognitive outcomes. There is robust evidence that infants' gestures and vocalisations on the one hand, and caregivers' contingent responses on the other hand, individually predict later child vocabulary. Recent studies suggest that dyadic combinations of infant behaviours and caregiver responses are more robust predictors of vocabulary than individual behaviours. Previous studies have not yet systematically compared the effects of different dyadic combinations on children's vocabulary outcomes.

We examined 114 caregiver-child dyads at 9–11 months during six minutes of free play and children's concurrent (N-CDIs) and longitudinal (N-CDIs and PPVT-III-NL) vocabulary outcomes at 2–4 years. Using robust linear models, we compared the predictive value of three subsets of predictors: 1) frequencies of infants' individual behaviours (vocalisations, points, and shows+gives) regardless of caregivers' responses, 2) frequencies of infants' behaviours met with caregivers' verbal responses, and 3) frequencies of infants' behaviours met with caregivers' multimodal responses for children's vocabulary outcomes. Caregivers' responses were both semantically and temporally contingent on infants' behaviours. Caregivers' multimodal responses included verbal responses that were at least partially overlapping with nonverbal behaviours, including gestures or other bodily movements.

We found that infants' points related to children's later receptive vocabularies measured with the PPVT-III-NL ($p < .001$), while infants' shows+gives (i.e., a combined category including shows and gives) related to children's later productive vocabularies measured with N-CDIs ($p = .01$) – only when taking the instances that were combined with caregivers' multimodal responses into account. We also found that only shows+gives met with caregivers' verbal responses ($p < .001$) and multimodal responses ($p < .01$) are significantly related to infants' gesture repertoires measured with N-CDIs. The results highlight the importance of examining dyadic combinations of behaviours during interactions when predicting children's vocabulary outcomes."

Typical first language acquisition: lexicon

07/18/2024

The Lexical Composition of Early Vocabulary in Late-Talking Toddlers

Hila Gendler-Shalev; Rama Novogrodsky

Toddlers with smaller vocabulary than expected for their age are considered late talkers (LT). The current study aimed to explore the characteristics of words in the early lexicons of LT and investigate how specific word characteristics affect the vocabulary acquisition of LT children. Specifically, we tested LT aged 12 to 24 months compared to age-matched (AM) and vocabulary-matched (VM) groups of typically developing peers. With this

aim in mind, we first conducted a preliminary study (study 1) to obtain babiness, concreteness, and iconicity ratings and phonological complexity scores of the words in the Hebrew-MacArthur-Bates-Communicative Development Inventory questionnaire (MB-CDI). The target words were rated by 116 Hebrew-speaking adults for babiness, concreteness, and iconicity and scored for phonological complexity. In study 2, we examined the effects of these four characteristics on the acquisition of LT and two groups of typically developing Hebrew-speaking toddlers (AM and VM). 396 toddlers (LT, AM, and VM) with 132 toddlers (90 boys) in each group were sampled from the original Hebrew MB-CDI norming study sample (Gendler-Shalev & Dromi, 2021). The proportions of each word in the lexicons of each group were calculated, and the effects of the characteristics of the words on their acquisition were tested. Findings revealed that across the three groups, toddlers' vocabularies consist of words that are closely related to their daily experiences (babiness), more concrete, more phonologically simple, and more iconic. The vocabulary characteristics of LT compared to AM (with larger lexicons compared to LT) and VM peers (with the same vocabulary size as the LT) were similar, supporting the view of LT's typical but slower vocabulary growth compared to TD.

Typical first language acquisition: lexicon

07/18/2024

The role of modality compatibility in elementary school children's language processing

Vera Wolfrum; Carina Lüke; Simone Schaeffner

"Successful communication often requires a combination of sensory and motor modalities in terms of perceiving something auditorily or visually, and responding vocally or manually, as well as rapid switching between modality combinations. Thus, switching between modalities is essential for educational success and (written) language acquisition. First indications that modality switching in language processing is significantly influenced by the compatibility of modalities can only be found in studies of adults. These imply that switching between relatively incompatible modality combinations (e.g., auditory-manual and visual-vocal) takes more time and is more error-prone than switching between more compatible combinations (e.g., auditory-vocal and visual-manual). The role of modality compatibility in children's language processing is still unclear. Therefore, we firstly investigate whether children show effects of modality compatibility. This may provide new perspectives on the mechanisms of language processing and the role of modality compatibility.

A total of 32 children will participate in the study and data collection will be completed in January 2024. Modality switching of 17 typically developed children from first to fourth grade (MAge = 8;4 years, SD = 1;2 years, 53% girls) was already examined using a task-switching paradigm. In two conditions, children make semantic decisions while switching between compatible or incompatible modality combinations (e.g., responding vocally to an auditory stimulus in the compatible condition and manually in the incompatible condition). Reaction times (RT) and error rates are assessed in both conditions.

First analyses show effects of modality compatibility in terms of longer RT and higher error rates in incompatible combinations compared to compatible combinations. Higher switch costs (i.e., longer RT and higher error rates in switch trials than in repetition trials) for switching between incompatible combinations compared to compatible combinations are evident regarding RT.

The results provide first evidence that children's language processing is influenced by modality compatibility."

Typical first language acquisition: lexicon

07/18/2024

Caregivers' fine-tuning and children's word learning during shared book reading

Laura Diprossimo; Kate Cain

Recent work has suggested that caregivers adjust their speech and language to their child's individual lexical knowledge during toy play and a tablet-based reference game. Such adjustment, or fine-tuning, has been linked to better immediate word learning and vocabulary development in children. Yet, whether this generalises to the shared reading context remains unexplored. We hypothesised that caregivers would adjust their communication to their child's individual lexical knowledge during shared reading interactions and that this fine-tuning would support children's word learning. To test these hypotheses, caregivers and their 4- to 5-year-olds engaged in shared reading with two custom storybooks designed to introduce words likely unfamiliar to children in our age range. Before the session, caregivers were asked whether their child understood and produced those words via a vocabulary checklist. The shared reading interactions were video-recorded, and caregivers' communication was coded offline for provisions of verbal and non-verbal scaffolds in relation to the target words. Children's word

learning outcomes were measured after the shared reading episodes. If the fine-tuning hypothesis generalises to the shared reading context, we expect to see i) an increase in caregivers' provision of scaffolds when they perceive a word as unknown by their child and ii) fine-tuning to uniquely contribute to children's word learning.

Typical first language acquisition: lexicon

07/18/2024

Development of linguistic competence: Comprehension and grammaticality judgment in child Japanese

Utako Minai; Miwa Isobe; Reiko Okabe

"Children's goal as L1 learners is to converge upon adult-like linguistic competence, allowing them to both judge the grammaticality/well-formedness of sentences and correctly comprehend their meaning. While children's meaning comprehension has been widely discussed, less is known about whether/to what extent children can judge the grammaticality of sentences whose meaning they can comprehend. The current study directly measured both comprehension and grammaticality judgment by preschool-age children, involving the Japanese negative polarity item 'sika'. 'Sika' conveys an "anything but/only" interpretation when it co-occurs with the negator '-nai' in the same clause (1), without which sentences are ungrammatical (2).

(1) John-wa koohii-sika noma-nai

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John-subj coffee-sika drink-neg
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"John doesn't drink anything but coffee."
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(2) *John-wa koohii-sika nomu

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John-subj coffee-sika drink
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While children overall comprehend sentences like (1) successfully (Endo, 2004), no study to our knowledge has examined whether children know that (2) is ungrammatical due to lack of negator. Hence, we investigated whether children who can comprehend the meaning of sentences like (1) are also able to reject and correct the ill-formedness of those like (2), conducting both a Truth Value Judgment Task and a Grammaticality Judgment Task. Preliminary results from 14 Japanese-acquiring children (three 4-year-olds, five 5-year-olds, six 6-year-olds, mean age=5;6) revealed ceiling comprehension accuracy (100%), while accuracy for the correct rejection of ill-formed sentences was 76.2%. Interestingly, grammaticality judgment failure was primarily observed for the three 4-year-olds, who were unable to detect ill-formedness (0% adult-like). A 5-year-old and a 6-year-old also failed to detect ill-formedness/correct the lack of negator, but only for the first few trials; they later shifted to successful rejection and correction of the error (83% adult-like overall). These results reveal that comprehension of 'sika'-sentences becomes adult-like by age 4, while adult-like grammaticality judgment emerges later, suggesting that aspects of linguistic competence exhibit different developmental trajectories."

Typical first language acquisition: morphology, syntax

07/18/2024

Common sentence structures used by Mandarin-speaking children aged 3 to 6

Shang-Yu Wu; Chia-Chun Hsu

"To study Mandarin syntactic development, previous research has explored specific sentence structures used by Mandarin-speaking children, such as classifiers and aspect markers (Erbaugh, 1992; Hsu, 1996). However, these studies lacked information about the comprehensive range of sentence structures produced by Mandarin-speaking children. Therefore, the current study aims to explore all the common sentence structures used by Mandarin-speaking children. The study included a total of 209 typically developing Taiwanese children aged 3 to 6 years, comprising 90 boys and 119 girls recruited from preschools in Miaoli City, New Taipei City, and Taipei City. Language samples collected from the participants were transcribed and analyzed, with all words coded using part-of-speech tagging.

Previous studies often considered only the occurrence frequency to determine whether children had acquired a certain sentence structure. However, it is possible that a high-frequency sentence structure is used only by few children who rely on that particular structure very often in their samples. Our study considers both the occurrence frequency and the number of children using each sentence structure when exploring the acquisition of sentence structures. By ranking the occurrence frequency of each sentence structure and ranking the number of children using them, we generated a list of common sentence structures for 3- to 6-year-old. Furthermore, we

compared the differences and intersections of the common sentence structures between children aged three and six, and we discussed which sentence structures become more mature as Mandarin-speaking children grow older.

The results present the lists of common sentence structures used by Mandarin-speaking children aged 3 to 6, along with the differences and intersections between the sentence structures used by children of different age groups. Additionally, we identified sentence structures that are developmentally significant for children and provided valuable insights into how their sentence structures evolve as they age."

Typical first language acquisition: morphology, syntax

07/18/2024

Acquisition of gender agreement in Sursilvan depends on context-specific frequency distributions

Jekaterina Mazara; Sabine Stoll

"We examine the acquisition of singular gender agreement marking of adjectives and participles in Sursilvan-Tuatschin (Rhaeto-Romance, Switzerland). Sursilvan agreement is challenging to acquire because: agreement forms differ between attributive and predicative positions; attributives distinguish two forms, masculine (-Ø/unmarked) and feminine (-a), while predicatives have three forms: masculine (-s), feminine (-a) and neutral agreement (-Ø/unmarked). In adult speech, attributive forms occur in roughly equal proportions (52% masculines, 48% feminines). Predicative forms are highly skewed towards neutral forms (82% neutrals, 10% masculines, 8% feminines). We ask whether the difference in distributions in attributive and predicative positions influences children's acquisition of the agreement system.

We examine correct use and production errors in children's and adults' production in a longitudinal corpus of six Sursilvan-Tuatschin learning children (750k words, age: 2;0 - 4;2).

We test whether position (attributive vs. predicative) or required marking (masculine, feminine, or neutral) influence the error rate.

Results from multilevel Bayesian logistic regression models show: (i) higher error rates for -s and -a forms compared to unmarked forms, (ii) controlling for position, both -s and -a have a similar effect compared to unmarked forms, (iii) predicatives show a higher error rate compared to attributives, (iv) feminine-requiring forms are more likely to produce errors in predicative than in attributive positions.

This shows that children are sensitive to context-specific distributions of forms. Even when the marker is the same in both positions (feminine -a in attributives and predicatives), they produce significantly more errors in predicatives. This is likely due to the limited number of feminine forms in predicative contexts in the input. This suggests that the acquisition of agreement does not constitute a single process of generalization across contexts but is affected by frequency distributions in different constructions."

Typical first language acquisition: morphology, syntax

07/18/2024

Emergence of subject-verb agreement and subject pronouns in Turkish

F. Nihan Ketrez; Ayhan Aksu-Koç

"Turkish is a morphologically rich pro-drop language and provides a good venue to observe the emergence of agreement and pro-drop systems in a child's speech. We hypothesized a relatively earlier acquisition of morphosyntactic marking of subjects through subject-verb agreement and a later emergence of overt subject pronouns due to the pragmatic conditions that they require.

Five monolingual Turkish speaking children (3 female, 2 male) were recorded longitudinally between ages 1;0-3;0 at their home during their free plays with their family members. Subject-verb agreement and overt or dropped pronoun contexts were targetted for analysis for each individual child. It was observed that both the agreement markers and subject pronouns emerged in single-word utterances before age 2;0 in all children's speech in obligatory contexts. Agreement omission and commission errors were recorded but were rare. No (ungrammatical) overuse of pronouns were recorded. Overt pronoun use was very early, before age 2;0, but observed relatively later than morphological marking of agreement, along with pragmatically motivated word order variations and topicalization with topic markers.

We attribute this order of emergence to the morpho-syntactically obligatory nature of the agreement markers and the relative pragmatic load behind the use of overt pronouns. The study confirms the earlier findings on

monolingual Turkish children's speech that documented early use of pronouns (Slobin and Talay 1986; Ekmekçi and Sofu 1994), and the predictions based on bilingual Turkish-English data (Haznedar 2010) as well as the observation regarding the early mastery of pragmatic conditions underlying word order variations (Sağın Şimşek 2016). It further complements them by showing that pragmatic competence is evident starting at a very early

age but it is still not as early as morphosyntactic marking of subject-verb agreement."

Typical first language acquisition: morphology, syntax

07/18/2024

Dimensionality of Finnish at 5 Years of Age: Evidence for Developing Grammar from FinnBrain Study

Kiia Kurila; Essi Vastamäki; Linnea Karlsson; Hasse Karlsson; Elina Mainela-Arnold

"Background: In assessing children's language abilities, receptive and expressive language are traditionally treated as separate dimensions. However, the two modalities develop in an intertwined manner, which raises the question whether the dimensions are truly separable from each other. Indeed, evidence evaluating dimensions of standardized language tests, support models with a single latent language factor. In this study, we investigate the dimensionality of developing Finnish sentence level language at the age of 5. Finnish is an agglutinative language with rich morphosyntax, so development of grammar is of special interest both theoretically and clinically.

Method: The data of the study comes from FinnBrain Birth Cohort Study. 394 children aged 5 years 1 months (girls, N=169 [42,9%], boys N=225) completed Reynell Developmental Language Scales III (RDLS III), a standardized language test that consists of subtests comprised of different categories of grammar, for example grammatical suffixes for nouns and verbs. The subtests are combined to receptive and expressive language indexes as well as a single language index. We tested the dimensionality of the Reynell using Exploratory Factor Analysis (EFA) and validated them with a Confirmatory Factor Analysis (CFA).

Results: Based on EFA eigenvalues, a 28-factor solution described the data best. After closer examination of item types and loadings, a 13-factor model following grammar categories was proposed. According to CFA model fit statistics, the 13-factor model explained a significant part of the variance and was a better fit than one or two factor solutions.

Conclusion: Our results failed to support the suggested expressive and receptive, or a single latent factor for the RDLS III. Instead, the results suggest multiple independently developing grammar categories for the Finnish sentence level language. This finding has interesting implications for the contemporary models of language development, such as the statistical learning models, which assume a single language learning mechanism."

Typical first language acquisition: morphology, syntax

07/18/2024

Between-item variability: Dutch Past Tense Predictors

Eleni Zimianiti; Lilian Ye; Abe Hofman; Rogier Kievit; Caroline Rowland; Seamus Donnelly

A largely debated research field in language development is the acquisition of past tense, which has been seen by many as a test bed case for generativist-constructivist debates about the nature of innate knowledge and its role in language acquisition. However, most previous studies have focussed on analysis of corpora, in which errors are rare, or elicitation tasks, in which only a few items can be tested at a time. This limits the amount of between-item variability available to be modelled, and makes it difficult to test predictions about the mechanisms driving the patterns of between-item variability. In our preregistered study we examined whether form-frequency, phonological neighbourhood density (PND), and telicity predict the verb-level difficulty of various past tense forms in Dutch. Dutch is a language understudied for its inflectional forms, while presenting unique vowel alternations in the formulation of past tense for a large number of verbs (e.g., Present Simple: helpen (help), Simple Past: hielp, Present Perfect: geholpen). These vowel alternations constitute phonological "neighbours" that can be used as phonological analogies to construct past tense forms. The more the "neighbours", the higher the speed and accuracy of production. Our uniquely large and longitudinal dataset (participants (N = 38,550) and items (N=694)) has been collected via an educational online platform, which administers items in a computer adaptive manner, ensuring fine-grained between-item variability. Our sample consists of Dutch-speaking children in the age range of 8 and 12 years old, the age at which children are still making past tense over-regularisation errors. We predicted that the item-level difficulty of verb forms will be

negatively related to form-frequency and PND, but positively related to the interaction of form-frequency and PND. Telicity may be related to item-level difficulty, but the direction of this relationship is yet unclear. Analyses are ongoing.

Typical first language acquisition: morphology, syntax

07/18/2024

Acquisition of Epistemic Modals in Mandarin Chinese: a Grammar-based Account

Chui Yi Lee

"English-speaking children less than 6 showed acquisitional delays in epistemic modals (EMs), contrast with their early acquisition of root modals around 2. Similar phenomena is reported in Chinese-speaking children. As Chinese EMs are raising predicates, we suspect whether the delays are correlated with another well-known acquisitional delay, namely raising past an experiencer argument (EA) by the subject (Snyder&Hyams2005), found in raised constructions (RCs) with seem-type raising predicates (StRPs). We investigate the question from a grammatical perspective.

Sentences with Chinese EMs require the subject to raise from SpecvP to matrix SpecTP. In (1), a RC with the Chinese EM yinggai'must', an EA (the speaker) is semantically required, yet phonologically prohibited.

[TPZhangsani (*duiyu-woexperinecer) yinggaiepist [vPti hen-youqian]]

Zhangshan to-1S.G. mustepist very-rich

'Zhangsan mustepist be very rich.'

Similar raising movement is found in RCs with seem-type raising predicates (StRPs). In (2), the subject John raises past the EA, to Mary, which is syntactically represented, yet phonologically optional.

[TPJohni seems (to Maryexperinecer) [vPti to be rich]]

We tested 15 Chinese-speaking children (3;06-10;08, Mage=6;06) with 4 picture-selection tasks and 4 fillers. In critical conditions, one picture showed an epistemic-compatible situation with indirect evidence; the other showed an epistemic-incompatible situation where using inference-reasoning is infelicitous.

While no age group achieved ceiling performance, overall performance is all well above chance, ranging between 71 and 81%.

To conclude, at least from 5, children are adult-like in comprehending EMs. As a comparison, children less than 6 still showed comprehension difficulties in their performance on English RCs with STRPs (Orfitelli2012). One possible interpretation is that the derivation of Chinese RCs with EMs do not involve raising past a syntactically represented EA; indicating the EA is purely semantically understood. This converges with Mateu(2020)'s finding about the Spanish-speaking 5-year-olds' performance on RCs with EM parecer'seem'."

Typical first language acquisition: morphology, syntax

07/18/2024

Acquisition of category of person in Estonian. "I think" vs. "you make"

Reili Argus

"The existing literature on the acquisition of the category of person, encompassing both pronouns and verbs, remains limited. Notably, there's compelling evidence linking language development to the development of Theory of Mind (ToM) (de Villiers 2007). The proficiency in using first and second-person singular (2SG) pronouns correlates with understanding others' mental states and a deficit in ToM development can impair children's ability to correctly use pronouns (Cadinu, Kiesner 2000). ToM doesn't develop uniformly, but strengthens through a predictable sequence of precursor capabilities such as desires, beliefs, knowledge and emotions (Peterson et al. 2012). Wellman & Liu (2004) identified a relationship between the employment of 2SG pronouns and type of mental state verbs.

This study aims to uncover the development trajectory of the person category in Estonian child language: when and in which order (on the basis of verb semantics) emerge personal pronouns; does the development of verbs in 2SG follow the contrasts of mental states, which are the possible factors influencing the frequency and the order of the acquisition of verbs in person constructions.

The data consists of three longitudinal spontaneous speech corpora (60 h, 2000 utterances per child) from Estonian children aged 1;3-3;1. All utterances consisting of verb were coded according to person, semantic type of a verb, and pragmatic type of an utterance.

Results highlighted that 2SG pronouns emerged last among singular personal pronouns. Distinctly, 2SG verbs varied from first and third person verbs. The appearance order of 2SG verbs aligns only partially with Wellman's and Liu's mental verb contrasts. The acquisition order seems influenced not by verb semantics but mainly by pragmatics, e.g., directive or interrogative use: 2SG verbs are mostly action verbs and used in directives. Hence, alongside verb semantics, i.e., mental state complexity, pragmatic elements also bear significance in analyzing person category and verb acquisition."

Typical first language acquisition: morphology, syntax

07/18/2024

Comprehension and production of number and tense agreement by French-learning 40-month-old children

Julie BODARD; NAZZI Thierry; SKORUPPA Katrin

"Few studies on subject-verb agreement in young children (and mainly based on spontaneous production analysis and parental reports) are available in French, especially comparing number and tense in comprehension and production. However, an asymmetrical pattern, with plural verb forms more easily understood than singular forms and conversely in production, was found in 5-10-year-old children. Concerning tense, children produced consistently 3rd person singular in present tense earlier (27-month-olds) than perfect and near future (34-month-olds).

Here we compared 40-month-old monolingual French-learner's ability to understand and produce (n=30) number and tense agreement between subject and verbs (with double markers: e.g. la-SINGULAR fille mord-SINGULAR 'the girl bites'). Six verbs were presented with a noun phrase in four conditions, to allow both number (3rd person present singular versus plural) and tense (perfect versus near future) comparisons. Children first did a picture elicitation task, and then matched sentences to dynamic gifs in a pointing task.

Data were not normally distributed, requiring non-parametric tests (one- and paired-sample Wilcoxon signed rank tests). For number (present), both singular and plural were understood above chance (p=.002, p<.001), but no significant difference was found between them in comprehension (p=.222), whereas singular was produced significantly more than plural (52% versus 22%, p<.001). For tense, past (p<.001) was understood significantly above chance but not future (p=.109), with a significant difference between them (p=.006), whereas both were still poorly produced with no significant difference (33% and 31%, p=.830).

Our results show that French-learning 40-month-olds still show more difficulties in future comprehension and future and perfect production, as well as an asymmetry between 3rd persons singular and plural comprehension and production. We will discuss the reasons in connection with crosslinguistic literature, analyze and discuss links between our experimental results and children's performance on standardized language tests, as well as children's errors and effects of prompting."

Typical first language acquisition: morphology, syntax

07/18/2024

An experimental investigation of differential object marking in L1 Romanian

Eelna Soare; Larisa Avram; Alexandru Mardale

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Differential object marking (DOM) was shown, in production studies, to be acquired early in L1. The picture which emerges from comprehension data, however, reveals that DOM is mastered later than previously thought. In this study we investigate the comprehension of DOM in L1 Romanian, a language for which production data reveal early acquisition, by age 3.

The Romanian DOM system is constrained by definiteness and animacy, with the latter being the weaker feature. There are configurations in which the animacy constraint is lifted and inanimate objects can or must be marked, which translates into variable input. This makes animacy a possible candidate to delayed acquisition.

The aim of this study is two-fold: (i) we test whether the Romanian data confirm the production-comprehension asymmetry reported for other child languages; (ii) we probe into the acquisition of animacy, predicted to be a vulnerable feature.

We conducted a preference judgment task which included 16 test sentences across 2 conditions balanced for animacy: DOM with proper names and DOM with definite common nouns.

80 Romanian-speaking children (aged 4;04 -11;04, divided into 4 groups: 5-, 7-, 9- and 11-year-olds) and 10 Romanian adults took part in the study.

Results reveal a significant delay in the full acquisition of DOM. Romanian children overgeneralize DOM to inanimate objects until late. With inanimate proper names the overgeneralization rate ranges between 40% with the 5-year-olds, 43.75% with the 7-year-olds and 11.25% with the 9-year-olds. With inanimate common nouns, the rate ranges between 20% with the 5-year-olds and 6.25% with the 7-year-olds, i.e. with common nouns the input divergent use retracts earlier.

The results are accounted for in terms of the variable behaviour of animacy within the DOM system of Romanian in conjunction with the current increase in the use of clitic doubling, a DOM marker less sensitive to animacy.

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Typical first language acquisition: morphology, syntax

Friday Posters

07/19/2024

Norming, reliability and sociodemographic effects in the Czech CDIs

Nikola Paillereau; Filip Smolík; Katerina Chládková; Tereza Sloupová; Barbora Dvořáková

"Consistent measurement of overall language development was demonstrated for the Czech CDI:WS with intercorrelations between different sections ranging from .88 to .91. In WG, a robust correlation exists between gestures and vocabulary production (r = .82), but a moderate correlation is observed between gestures and vocabulary comprehension (r = .58), and between vocabulary comprehension and production (r = .56). The comprehension component yielding lower correlations is in line with litterature (Eriksson et al., 2012).

The norming sample includes 1,004 infants (495 boys; 509 girls) aged between 0;8 and 1;6 in WG, and 1,043 toddlers (528 boys; 515 girls) aged between 1;4 and 2;6 in WS.

Sociodemographic effects were evaluated using regression models. In WG, higher-educated mothers reported lower scores than less-educated mothers. In word production, girls attained higher scores than boys, and mothers reported a richer vocabulary compared to other reporting caregivers. The model for word production in WS revealed a growth trend that decelerated for girls but accelerated for boys, aligning with findings from cross-linguistic comparisons (Frank et al., 2021). Additionally, an interaction of age and maternal education indicated that higher-educated mothers reported higher production scores in older children compared to lower-educated mothers.

Reliability measures included interrater evaluations at various age ranges: 0;8–0;10 (N = 27) and 1;3–1;5 (N = 38) in WG, and 1;5–1;8 (N = 37) and 1;11–2;6 (N = 39) in WS. Interrater partial correlations were notably high (≤ .72), except for vocabulary comprehension (r = .45). Test-retest partial correlations, based on scores from 30 infants in WG and 19 toddlers in WS, demonstrated high values across all components (≤ .82).

In sum, the Czech CDIs stand as robust tools for gauging language development, albeit the comprehension segment in WG displaying lower reliability."

Assessment tools, their adaptations, including CDI's

07/19/2024

Norming and validation studies of Polish LITMUS-Cross-Linguistic Lexical Tasks

Magdalena Krysztofiak; Magdalena Łuniewska; Martyna Burdach; Ewa Komorowska; Dorota Orzeszek; Judyta Pacewicz; Julia Radzikowska; Ewa Haman

"Young children's vocabulary is a predictor of their later language and cognitive functioning (Marchman & Fernald, 2008) and reliable assessment of these skills is crucial. In particular, standardized and normed tools in all of the child's languages are necessary. Cross-Linguistic Lexical Tasks (CLTs) (Haman et al., 2015) are a set of unique tools designed to assess lexical development in preschool-aged children. CLTs target comprehension and production of nouns and verbs in the form of picture-naming and picture-choice tasks. There are over 35 CLT language versions. However, since none of the CLTs have yet been normed, they cannot be used as diagnostic tools. The aim of this poster is to outline the revision, norming and validation study of the Polish CLT, one of the first-ever norming studies of a tool from the LITMUS battery (Armon-Lotem et al., 2015).

The final norming sample will consist of a representative group of at least 300 Polish monolingual children aged 3;0 to 5;11. The study employs a custom-designed CLT app for tablets. To test the convergent validity of the CLT we are assessing children with another standardized test of receptive vocabulary (OTSR; Haman et al., 2012) and with a recent Polish adaptation of CDI-III (Krajewski et al., 2023). To test the predictive validity of the CLT 50 children are retested after 6 months. So far, 397 children have been tested with CLT, 9 children have been tested with other tools and 8 children have been retested. The data collection is planned to be finished by the end of 2023.

This study will allow us to describe the typical trajectory of vocabulary development in a representative sample of Polish 3-to-6-year-old children. Furthermore, in the future, Polish CLT may be used by practitioners and improve the diagnosis of language disorders in Polish-speaking children."

Assessment tools, their adaptations, including CDI's

07/19/2024

Distinguishing typical and atypical acquisition in Hungarian with a new norm-based language test

Agnes Lukacs; Bence Kas; Peter Pajkossy

"Manifestations of developmental language disorders (DLD) show language-specific patterns across various levels of language (Leonard, 2014). Accordingly, distinguishing children with DLD from typically developing children requires meticulous cross-linguistic adaptation or language-specific development of tests assessing language abilities. Following two decades of research on the nature of DLD in Hungarian (Lukács et al. 2009, 2010, 2013), a complex language ability test, grounded in internationally recognized methodology, but reflecting the Hungarian language structure, has been developed and standardized (Lukács & Kas, in preparation).

The objective of the present paper is to evaluate the capacity of the new language test to discriminate between typically developing children and children with DLD across different age groups.

The experimental groups consisted of children with DLD aged 4-6 years (n=14), 7-9 years (n=25) and 10-13 years (n=20), studying in special institutions. Their performance was compared to three groups of typically developing children, randomly selected from the test's normative database of 505 typically developing children, matched on chronological age and sex. The method used was the newly developed Complex Test of Spoken Language Abilities, KOBAK), a comprehensive battery of 16 subtests evaluating different domains of spoken language ability in children between 3-13 years spanning all language levels and functions.

Results show significant differences between groups with DLD and typically developing children on the great majority of subtests in all three age groups. For the youngest children, subtests assessing sentence comprehension, expressive and receptive vocabulary, short-term phonological and syntactic memory, and morphological structure differentiated the groups with the greatest effect size (all r>.0.5). In older children, sentence formation and rapid serial naming also proved to be efficient in discriminating between typical and atypical language development. The results show the suitability of the new language test in differentiating typical and atypical language development in Hungarian."

Assessment tools, their adaptations, including CDI's

07/19/2024

Bilingual Assessment of Phonological Sensitivity: A Semi-Adaptive, Computer-Based Assessment

Carol Scheffner Hammer; Shelley Scarpino; Ryan Boyles; Bethany Keffala; Sarah Goodwin

"Phonological sensitivity is one of the best predictors of reading outcomes in both English-speaking children and Spanish-English Dual Language Learners (DLLS). Because there are no psychometrically sound, comprehensive assessments developed for Spanish-English speaking preschool and kindergarten children, we developed the Bilingual Assessment of Phonological Sensitivity (BAPS), which efficiently measures DLL children's abilities in Spanish and English across tasks that capture the developmental continuum of phonological sensitivity. The purpose of this poster is to describe the BAPS and share the results of a study of its reliability and validity.

Trained bilingual assessors administered the BAPS to 593 Latino, Spanish-English speaking children attending early childhood programs in the United States. Children, ages 3;6 to 5;11 years/months, were from low-SES to high-SES homes. All children were given the Spanish and English PreLAS, and a subset were given the Clinical Evaluation of Language Fundamentals (CELF) Sentence Structure and Expressive Vocabulary subtests in English and Spanish.

Rasch measurement analyses were performed using Winsteps to identify items that were effectively measuring phonological sensitivity. To minimize testing time while maintaining high reliability, we created a semi-adaptive branching version of the BAPS. We selected subtests to include on the branching version if: most items of the subtest fit the Rasch model well in both languages, and inclusion of the subtest ensured each branch yielded information about children's phonological sensitivity equivalent to a reliability of at least .8.

Rasch analyses revealed excellent item functioning. The items formed a unidimensional scale, with few instances of differential item functioning across gender. Selected subtests included blending syllables and phonemes, segmenting syllables and phonemes, initial sound production, and rhyme production. BAPS English and BAPS Spanish were correlated with the English PreLAS and CELF subtests (.40 to .51) and Spanish PreLAS and CELF subtests (.36 to .52), respectively."

Assessment tools, their adaptations, including CDI's

Qualitative Assessment of Slovak-Speaking Children's Vocabulary as Part of LITMUS-CLTsk Norms

Svetlana Kapalkova; Daniela Slančová; Alexandra Brestovičová; Terézia Horská; Jana Sokolová; Andrej Mentel; Monika Nemcová; Stanislava Spáčilová; Martina Peregrínová

The goal of the contribution is to present the methodological background and preliminary results of a project focused on the assessment of the vocabulary of Slovak-speaking preschool children. The assessment is based on a set of tests adapted for Slovak (non-word repetition tasks, repetition of sentences, Multilingual Assessment Instrument of Narratives (MAIN), Object Clitics Test, test of executive functions and multifactor evaluation of the cultural capital of the children's families) with the main focus on the Cross-Linguistic Lexical Task (LITMUS-CLTsk) for comprehension and production of nouns and verbs. The project is of norming-study character with the main goal of establishing CLTsk norms for the assessment of intact pre-school Slovak-speaking children's vocabulary. The sample consists of monolingual Slovak-speaking children, bilinguals with Slovak as L1 or L2, bilingual children from marginalized communities, and children diagnosed with DLD or stuttering. Five hundred girls and boys between the ages of 3 and 6 from all over Slovakia and various socio-economic backgrounds have been tested so far. A language-sensitive system for distinguishing correct and incorrect answers, methodologically based on the original Slovak theory of lexical motivation, are to be presented. It is to show what kind of incorrect answers are systematically produced by TD monolinguals and bilinguals, DLD mono- and bilinguals, bilinguals from marginalized communities, and at risk children. The preliminary data show qualitatively different types of incorrect answers within the mentioned groups.

Assessment tools, their adaptations, including CDI's

How to measure lexical diversity in Inuktitut? Testing MATTR with child and child-directed speech.

Olga Alice Johnson; Shanley Allen

"Lexical diversity (LD) refers to the ratio of different words to the total number of words in a text and is often used as a measure of lexical development in children. Several methods, such as TTR, D, MTLD, MATTR, and their variations have been used to measure LD. The reliability of the methods greatly depends on several factors, such as the type of data, the length of the text, and the structural characteristics of the language. The aim of this study is to determine whether one of the methods to measure lexical diversity, Moving-Average Type-Token Ratio (MATTR), can be reliably applied in Inuktitut – a language which polysynthetic agglutinative structure that allows expressing the meaning of an entire sentence in one word (1) – to assess children's linguistic development.

(1) Illujaraalummuulaursimannginamalittauq.

illu-juaq-aluk-mut-uq-lauq-sima-nngit-gama-li-ttauq

house-big-EMPH-ALL.SG-go-PAST-PERF-NEG-CSV.1sS-but-also

"But also, because I never went to the really big house." (Dorais, 2011)

We tested MATTR on spontaneous speech data from eight typically developing Inuktitut-speaking children (ages 0;11 to 2;10 at onset) and their caregivers. Using MATTR, we calculated LD for words and for morphemes with the length of the smallest file as the window size. We then used the mean length of utterance in morphemes (MLUm) – a widely accepted method for determining the children's stage of linguistic development (Allen & Dench, 2015) – and the children's age for correlation tests. We found that, for both the children's data and the caregivers' data (child-directed speech only), LD measurements correlated with the children's level of linguistic development and with the children's age. These results (a) demonstrate that MATTR is a suitable method to measure LD in Inuktitut and (b) suggest that LD in Inuktitut can be reliably measured in either morphemes or words using the window size that is equal to the size of the smallest data file/text."

Assessment tools, their adaptations, including CDI's

Development and Validation of Picture Vocabulary Test for Mandarin Chinese-Speaking Children

Chien-Ju Chang; Huei-Mei Liu; Po-Hsi Chen; Ya-Wen Chen

The primary objective of this study was to create a standardized assessment tool for evaluating the vocabulary skills of contemporary Mandarin Chinese-speaking children between the ages of 3 and 12. This assessment includes both receptive and expressive vocabulary tests, presented in two versions identified as A and B. Each version of the receptive vocabulary test contains 52 items, while the expressive vocabulary test has 35 items. The development of this assessment encompassed three phases: preliminary, pilot, and formal testing. During the formal testing phase, 1,708 children from various regions of Taiwan, spanning preschool through sixth grade, participated in the study. Of these participants, 881 completed version A of the assessment, while 827 completed version B. The results indicated that both versions of the receptive and expressive vocabulary tests showed strong internal consistency, with Cronbach's alpha exceeding .9, and a split-half reliability higher than .87. Moreover, both versions demonstrated a significant positive correlation with the revised Peabody Picture Vocabulary Test, affirming their validity for measuring vocabulary skills. Scores on both tests increased with the age of the children, confirming their ability to effectively differentiate between age groups. An item response theory analysis revealed that both versions of the tests displayed a good fit with the items. To simplify the testing process for young children, the researchers created age-appropriate question sets for each age group. Additionally, a computer-based version of the test was developed to streamline scoring and administration. Overall, the findings of this study suggest that this assessment tool can be widely utilized to evaluate the language skills of preschool and school-aged children, and it also holds promise as a valuable resource for assessing the effectiveness of educational interventions in the future.

Assessment tools, their adaptations, including CDI's

07/19/2024

Assessing preterm toddlers communicative development: for a combined use of methods

Tiphanie Bertin; Caroline Masson; Marine Le Mené Guigoures; Christine da Silva Genest

"Studies on the language of very preterm children under the age of two are mostly based on spontaneous interaction data, analyzed through developmental scales or criterion-based forms (Benassi et al., 2017). For older children, assessment is preferentially done using standardized tests (Zimmerman, 2017). As pointed out by Imgrund et al. (2019) for 4-year-old preterm children, we assume that a combination of these two methods would provide a more accurate picture of the characteristics of the communicative and language development of very preterm toddlers. Our study therefore aims at examining the relevance of combining elicited data from a standardized test with data from recordings of spontaneous interactions.

This work is based on the data from 6 children aged 12 and 18 months. These children were tested through an early communicative development test (ECSP; Guidetti and Tourette, 2009), based on the Early Social Communication Scales (Seibert and Hogan, 1982). They were also filmed while interacting with a parent during a free play. The test focused on children's skills in social interaction, joint attention and behavior regulation. The analysis of the spontaneous data also focused on joint attention, and in addition, on the interlocutors' dialogic positions and on the typology of communicative modalities.

The comparison of the outcomes for the ESCP test and for the interaction data highlighted the value of using a combination of these two methods to provide a detailed description of children's skills. The interaction data with a parent gives a dynamic illustration of the difficulties and skills first identified through the elicited data. They appear to be of significant benefit to work on the assessment of children's skills. They give access to what children can do in interaction with a familiar adult, in familiar interactional modalities, and also provide information on parental input and parental language support practices."

Assessment tools, their adaptations, including CDI's

07/19/2024

Computer Adaptive Testing simulations of CDI data — a cross-linguistic comparison

Grzegorz Krajewski; Hila Gendler-Shalev; Karolina Muszyńska; Nina Garmann; Svetlana Kapalková; Hanne Simonsen

"Computer Adaptive Testing (CAT) gains popularity among researchers working with CDIs. This approach enables a dynamic choice of the best suited item (word) based on the parent's previous responses which significantly shortens administration while retaining its good psychometric characteristics. It is possible thanks to large item-level CDI datasets. They are needed to estimate psychometric parameters of each item for the CAT algorithm and to run simulations to identify optimal algorithm settings.

Here we report a set of such analyses and simulations performed on CDI Words & Gestures (Comprehension scale) adaptations to Hebrew (1072 administrations, 423 items), Norwegian (2159, 395), Polish (1381, 380), and Slovak (653, 309). For each dataset we first excluded zero-variance items, then fit two-parameter Item Response Theory (IRT) models, excluded items with no fit or high local dependency, iterating the procedure as needed. We used model estimates to simulate (with various settings) CAT measurements for each administration in a dataset (cf. Kachergis et al., 2022).

IRT analyses show that in all datasets standard error (SE) of a vast majority of measurements is <.1. In all datasets it is strongly related to the ability level (?), exceeding .1 for extreme ?'s. In Norwegian, Polish and Slovak but not so much in Hebrew the precision seems particularly lower for younger children.

Simulations show that in Norwegian, Polish and Slovak 15-18.5% CAT administrations don't reach SE<.1 before all available items are used, whereas in Hebrew only 8.6%. The number of items that parents need to reply to for ? estimate to have SE<.1 is similar though for all four datasets and reliability of such shortened measurements remains >.98 for all of them.

Despite differences between the languages, instruments and datasets, IRT analyses yield similar results. The observed differences suggest though that CAT settings should be decided individually."

Assessment tools, their adaptations, including CDI's

07/19/2024

Why It's Time to Move Beyond Using the Type-Token Ratio

Carly Rosvold; Youngjin Han; Ji Seung Yang; Nan Ratner

"In both clinical and research settings, language sample analysis (LSA) remains an unmatched standard. However, surveys show that few measures from such analyses are ever utilized by clinicians (Finestack et al., 2020). In both research and clinical practice, of available lexical diversity measures, the most frequently used index reported is the Type-Token Ratio (TTR; Templin, 1957). However, the reliability and validity of TTR has been repeatedly challenged and we know little about its relationship to other measures of lexical diversity (e.g., NDW, MATTR, & VocD). Work by Yang et al. (2022) suggest that VocD is a superior measure of lexical diversity in tracking child development over time, but that all measures are badly contaminated by the context of sampling, such as how many toys/props are available or handled.

Findings from this analysis provided compelling evidence that non-linguistic factors, such as engagement with various elicitation props, capture viable lexical information and are not insubstantial determinates of lexical diversity scores. A possible solution is to standardize language elicitation context if we wish to measure lexical diversity. To evaluate this solution, we analyzed data from Gillam and ENNI datasets available at TalkBank to compare the diagnostic accuracy and growth trajectories of five different lexical diversity measures within a standard set of elicitation sampling stimuli. To explore this, various regression models were fitted, and bivariate correlations were conducted. Our findings show a consistent pattern, VocD is the only lexical diversity measure to capture growth trajectories and diagnostic sensitivity across both datasets. These findings suggest that even using a standard set of picture stimuli to elicit samples does not solve this problem. Of the measures, VocD still remains the only measure to show growth over age in children, and discriminate delay/disorder from typical development, while TTR remains the weakest, even when sampling context is standardized."

Assessment tools, their adaptations, including CDI's

07/19/2024

Identifying developmental language disorders: a case study of Lithuanian

Egle Krivickaite-Leisiene; Ineta Dabasinskiene; Laura Kamandulyte-Merfeldiene; Skirmante Gribauskiene; Viktorija Kavaliauskaite-Vilkiniene

"The process of children's grammar acquisition plays a fundamental role in language assessment, as it provides insights into their linguistic development and proficiency, serving as a key component in evaluating their language abilities (Bishop, 2003; Thordardottir et al., 2019).

Our objective is to present the findings of a comparative study using a language assessment tool designed for preschool children. We collected data from 242 children with development language disorder (DLD) (age range: 4;00–6;11 years) and 59 age-matched typically developing (TD) children. The DLD group consisted of children with different language disorders, i.e., phonological disorder and three levels of DLD (mild, moderate, and severe). All participants underwent the same language assessment, which evaluated several sub-components of

the language system: comprehension and production of vocabulary and grammar, pronunciation and differentiation of sounds, and narrative production.

The findings from the comparative study allowed us to observe differences between levels of DLD. Considerable differences between the participants were observed in the grammar tasks, except for the phonological disorder and TD groups. Children with DLD struggle with certain aspects of grammar, such as cases, number, and space constructions. The results of the vocabulary task showed that children with DLD have much smaller active and passive vocabulary than TD children or children with phonological disorders. Children with DLD have an extremely limited vocabulary for naming actions. The phonology task demonstrates low scores for severe and moderate DLD levels and phonological disorder group. Finally, significant differences were identified between all DLD groups in the narrative task."

Assessment tools, their adaptations, including CDI's

07/19/2024

The Diagnostic Value of English Language Sample Measures for Identifying DLD in Bilinguals

Michelle Ramos; Elizabeth Peña; Lisa Bedore

One factor contributing to the misdiagnosis of developmental language disorder (DLD) in bilingual children in the United States is the severe shortage of speech-language pathologists who can administer assessments in the child's home language. As of 2022, only 8% are bilingual, speaking only 83 of the more than 400 languages represented nationwide. Misdiagnosis exacerbates existing risks of reading and math difficulty, mental health and behavioral challenges associated with DLD, as well as academic vulnerabilities bilingual students experience. One solution for addressing these health and educational disparities is to develop assessment methods that can be conducted in English and accurately identify bilinguals' language ability. Language sample analysis (LSA) is already recognized as a culturally and linguistically sensitive gold standard assessment, but clarification is needed regarding which measures are most informative for diagnosis in this population. Previous studies found classification accuracy of examined LSA measures inadequate, but selection of more sensitive measures and/or indexing performance to English exposure may yield more optimal diagnostic performance. To that end, this study explores the classification accuracy of four measures derived from English narrative retell samples for identifying DLD in 5- and 6-year-old Spanish-English bilinguals: percent grammatical utterances, errors per C-unit, mean length of utterance, and subordination index. Narratives from sixty-one pairs of children with and without DLD matched on English exposure will be analyzed using pooled and covariate-adjusted ROC analysis, with percentage of English exposure as the covariate, to identify the optimal classification accuracy of each measure. Analyses are ongoing, but preliminary results of discriminant function analysis with 30 matched pairs indicated nearly acceptable diagnostic accuracy (76.7% sensitivity, 80% specificity) using a combination of errors per C-unit, subordination index, and English exposure. Results of this study will inform the use of LSA in clinical practice with bilingual children.

Assessment tools, their adaptations, including CDI's

07/19/2024

A Comparison of Computerized Black English Sentence Scoring And Developmental Sentence Scoring

Carly Rosvold; Nan Ratner; Barbara Zurer Pearson

"Culturally responsive language assessment in linguistically diverse populations has been a longstanding need. A population of particular interest in assessment methods has been children who speak African American English (AAE). Within the past few decades, an expanding literature has tried to distinguish between dialect variation and disorder in young speakers of AAE by redesigning assessment approaches. The purpose of this study is to compare the use of Black English Sentence Scoring (BESS; Nelson, 1976) with Developmental Sentence Scoring (DSS; Lee, 1974) in identifying developmental language disorder (DLD) in young Mainstream American English (MAE) and AAE speakers using Computerized Language Sample Analysis (CLAN; MacWhinney, 2000).

To address this question, we use two cohorts. We analyze 115 children ages ~36 months, 60 MAE speakers gathered from the Rescorla database and 55 AAE speakers gathered from the Stockman database, both on Talkbank, and a slightly older cohort compiled from the DELV and Ellis Weismer corpora. DSS scores are computed using the DSS utility in CLAN. BESS scores are computed using the recently added BESS utility, based on Nelson and Hyter's (1990) BESS criteria. We predict that both DSS and BESS will be able to diagnostically differentiate typically developing (TD) groups from language impaired groups (LI). Our preliminary analysis found that DSS and BESS scores were significantly different between groups, providing

support for the diagnostic accuracy of these developmental scales in differentiating TD from LI groups. Additionally, we predict that TD speakers of AAE will outperform MAE speakers when assessed using BESS conventions, and conversely TD speakers of MAE will outperform AAE speakers when assessed using DSS conventions. Our work is ongoing and results will be reported in July. Our is aim to validate the implementation and accessibility of BESS in computerized language analysis while adding to the growing literature on non-biased assessment tools."

Assessment tools, their adaptations, including CDI's

07/19/2024

Associations between demographic characteristics and vocabulary of Bulgarian toddlers

Mihaela Barokova; Elena Andonova

Research on Bulgarian speaking children's language development is limited due to lack or scarcity of instruments and available observation corpus data. The Bulgarian adaptation of the MacArthur-Bates Communicative Development Inventory Words and Sentences, one of the few available instruments, has been used previously to characterize Bulgarian toddlers' grammar and vocabulary. However, the adaptation of the MB-CDI Words and Sentences Short form has not been extensively used. The present study aims to examine 1) the psychometric properties of the form and 2) the associations between children's demographic characteristics, specifically, age, gender, and SES, and their vocabulary. Between 2021 and 2023, we used the Short form to obtain parent report data on 385 Bulgarian toddlers (Female = 213; Male = 171; 1 missing data) between 16 and 36 months of age. The 97 items of the short form had excellent internal consistency (Cronbach's α = .99). There was a significant positive correlation between children's total vocabulary score and their monthly age (rs = .689, p < .001). A regression analysis revealed no main effects of SES, operationalized as the parent's subjective estimate of the family's financial situation, and no effects of parental education and child gender. Past research has also found no significant differences in Bulgarian toddlers' vocabulary between boys and girls, when controlling for chronological age. The lack of associations between children's vocabulary and their demographic characteristics will be discussed in a cross-cultural context.

Assessment tools, their adaptations, including CDI's

07/19/2024

Longitudinal Growth of Complex Syntax in the Spontaneous Samples of Bilingual Children

Javier Jasso; Anny Castilla-Earls; Javier Reyes; Juliana Ronderos

"Bilingual children's use of complex syntax in both typically developing children (TD) and those with developmental language disorder (DLD) is relatively understudied. Longitudinal trajectories of complex syntax types during school age are particularly relevant given the communicative and social importance these carry. The present study examined the longitudinal development of complex syntax in the spontaneous speech of bilingual children with DLD and their TD peers.

Research Question

1. What is the growth trajectory of complex syntax types in children with and without DLD?

100 bilingual children (DLD: n=43; TD: n=57) participated in a longitudinal study with three time points over a two-year period. Children with DLD were identified using a converging evidence framework. Spontaneous language samples from both groups were elicited using frog tell/retells and transcribed using SALT conventions. Complete, intelligible utterances were coded for subordination index (SI). Separately, subordinate clauses were coded for clause type based on their structure, regardless of grammaticality, and included the following structures: finite/infinitival complement clauses, relative clauses, and adverbial clause.

Multilevel models were used to investigate complex syntax growth, with SI and clause frequency (occurrences/# utterances) as the dependent variables. Data were analyzed in R using the lme4 package. Tested models included both fixed effects (age, DLD status, clause type) and random intercepts (child, age). Models with SI indicated growth in both languages, as well as TD–DLD differences. Models with clause frequency will be analyzed prior to the conference. Preliminary results provide evidence of growth in children's complex syntax in their two languages."

Bi-/multilingual acquisition in DLD and developmental conditions

07/19/2024

Nonword Repetition in Urdu-Speaking Children with and without Developmental Language Disorder (DLD)

Saboor Hamdani; Angel Chan; Kamila Polišenská; Rachel Kan; Shula Chiat

"Nonword repetition (NWR) has been reported as a clinically informative measure in differentiating between children with and without language disorder cross-linguistically (Ortiz, 2021). Since nonwords are by design unknown items, NWR is less influenced by prior linguistic knowledge and therefore could be less biased against bi-/multi-lingual children who have reduced experience of the target language.

This study is an empirical first in examining the clinical utility of NWR in identifying DLD in Urdu-speaking children. Specifically, it examined whether the new Urdu NWR test would disadvantage typically developing (TD) children with reduced experience in the target language, and whether this NWR test can also differentiate between children with typical development but reduced experience to the language of assessment and children with DLD.

Three groups of children were recruited:

i) L1 Urdu TD multilingual children (minority group, N=31; mean age = 8;1, range = 6;1–10;11)

ii) L1 Urdu TD peers (majority group, N=31; mean age = 8;1, range = 6;1–10;10) - age, gender, and grade-matched to minority group

iii) L1 Urdu majority language children with DLD (N=14; mean age = 8;1, range = 6;1–10;11)

Children were assessed through adapting a quasi-universal NWR task currently known as the LITMUS Crosslinguistic Nonword Repetition test (CL-NWR) into Urdu (Chiat, 2015; Hamdani et al., 2020).

Results indicated that the majority language DLD group scored significantly lower than both the majority and minority language TD groups at the syllable/segment-correct level. Moreover, children from the minority language TD group performed similarly to their majority language TD peers suggesting that the new Urdu NWR test did not disadvantage these minority language TD children acquiring Urdu as L1 under reduced input conditions. The findings provide the first evidence that the Urdu CL-NWR test could yield significant TD/DLD group differences, even for TD children with reduced language experience."

Bi-/multilingual acquisition in DLD and developmental conditions

07/19/2024

A combined working memory and lexical intervention for word learning in DLD

Paola Calabrese; Vesna Stojanovik; Paola Pagnamenta

"Verbal working memory (VWM) and lexical knowledge are required to encode and store newly encountered words, and both systems can be less efficient in children with Developmental Language Disorder (DLD). Previous research explored the effectiveness of lexical interventions, transfers from VWM improvements to language skills, and whether word learning difficulties result from poor sublexical representations or VWM. However, the potential of the synergic interaction between these systems in improving word learning has not been explored. We argue that both systems need to be enhanced to improve the mechanisms underlying word learning in children with DLD.

The present work aims to explore the relationship between VWM and lexical knowledge during the acquisition of new words in children with DLD by combining an existing lexical intervention 'Lexicon Pirate' (Motsch & Ulrich, 2012) with working memory training to optimise word learning in children with DLD. We hypothesise that the group receiving the combined intervention to improve more significantly in word learning, especially in the acquisition of longer words.

Children with DLD aged 6;0-8;11 will be randomised to a combined intervention (lexical + working memory) group and lexical intervention only group. Both interventions will be delivered in 20 sessions over 10 weeks. Pre- and post-intervention and 3-month follow-up assessments will include a dynamic experimental word learning paradigm and standardised tests of vocabulary and VWM. We expect the group receiving the combined intervention to improve more significantly than the other, especially in the acquisition of long words.

The novelty of this work is its aim to investigate and strengthen the mechanisms underlying word learning in DLD rather than teaching children a list of new words. Findings will shed light on the nature of word learning difficulties and on the importance of considering broader cognitive profiles in the assessment and management of children with DLD."

Longitudinal change in Spanish grammar in biilinguals with and out DLD

Lisa Bedore; Elizabeth Peña; Amy Pratt

We examine the interaction between language experience and ease of production/level of difficulty of three grammatical forms (articles, direct object clitics, and subjunctive) using longitudinal data from 64 Spanish-English bilingual children with typical language development (TD) and developmental language disorder (DLD). Specifically, this study explores how language exposure and usage influence the production accuracy of these forms between Kindergarten to grade 5. Sixty-four children from a larger participant pool were selected for inclusion in this analysis because they had complete data for four consecutive yearly assessments. All children completed cloze tasks that sampled the production of the three grammatical forms of interest. Level of bilingual language exposure was determined based on parent and teacher interviews. Risk for DLD was determined based on screening performance prior to study entry and confirmatory testing at the first data collection time timepoint. The accuracy of article production was the highest of the tested forms across 4 years for both TD and DLD groups. The accuracy of direct object clitics decreased slightly in the TD group but increased for children in the DLD group. Subjunctive accuracy increased for both TD and DLD groups, but the increase was higher in the DLD group than their TD peers. Results of GLM show that accuracy at the fourth and final year of assessment differed by grammatical markers. Accuracy at first observation point (either Kindergarten or second grade) best predicted increased accuracy in articles, risk for DLD or ability impacted change in subjunctive production and both initial accuracy and ability predicted clitic production. These results illustrate that even when performance changes with development that articles, direct object clitics and subjunctives are consistently produced less accurately by Spanish-English bilingual children with DLD than their typically developing peers. These structures are differentially predicted by children's initial accuracy and ability.

Understanding language learning in bilingual children and children with language difficulties

Chloe Korade; Monique Charest

"Introduction: Bilingual children, especially those early in their second language (L2) development, are known to be at risk for misdiagnosis of language difficulties. These children often show a less advanced development in their L2 relative to monolingual peers, especially in the domain of grammar. As they learn the language, typically-developing (TD) bilingual children often present with production patterns that resemble those seen in children with Developmental Language Disorder (DLD), such as omitting the past tense -ed. These factors create challenges in differentiating a language difference from a language disorder in bilingual children. Research is ongoing to identify valid means of distinguishing between language learning difficulties and language differences that reflect different exposure. Research on language processing in children with DLD shows that these children have deficits in their implicit learning mechanisms. Given the overlap between TD bilingual children and children with DLD, investigating differences in the short-term implicit learning of grammatical structures between these two populations may help distinguish between typical and impaired language development in bilingual children.

Objectives: To examine short-term change in the implicit learning of the past tense -ed structure in TD bilingual children and children with DLD.

Methods: I will first obtain a baseline measure of children's past tense -ed production. The teaching phase consists of implicitly teaching the morpheme using a method from psycholinguistics called priming. Following the teaching phase, I will conduct probes with no priming component at 5 minutes and 24-48 hours posttask.

Anticipated Results: I predict that the two language groups will show similar tense-marking profiles at baseline, but that the TD bilingual group will show greater growth over trials and posttest.

Conclusions: This research highlights the importance of integrating knowledge of unique language profiles with language assessment approaches in order to identify optimal learning contexts for these children."

Linguistic Antecedents of Disfluency in Bilingual Parent-Child Interactions

Chenelle Walker; Emma Libersky; David Parra; Margarita Kaushanskaya

Speech disfluencies (e.g., filled pauses and repetitions) are a common occurrence in spontaneous productions of people without fluency disorders. However, speakers may become more or less disfluent according to a number of factors, including processing load, planning difficulty, and strategic communication strategy. For instance, studies have indicated an association between disfluencies and the structure of the utterance, with longer utterances eliciting more disfluencies, likely because they place greater demands on speech motor planning and execution processes. Although there is a rich literature describing the factors that modulate fluency in monolinguals, we know relatively little about the factors that impact fluency in bilinguals. Recent work has indicated that bilinguals may produce more disfluencies than monolinguals, but the factors underlying disfluency in bilinguals, especially bilingual children, are poorly understood. In this study, we examined linguistic factors that may be associated with disfluencies in bilingual children and their caregivers during spontaneous play-based interactions. Forty-four Spanish-English bilingual parent-child dyads played together in lab, using the language(s) of their choosing. We then asked: 1.) Are bilingual children and parents more disfluent when they produce utterances containing less frequent words?; 2.) Are bilingual children and parents more disfluent when they produce longer utterances?; and 3.) Are bilingual children and parents more disfluent when the language of utterance does not align with the language of dominance? The results indicated that both children and parents were more disfluent when producing longer utterances. However, lower cumulative word frequency of an utterance did not impact disfluency rates. English-dominant parents were more likely to be disfluent in Spanish than English, but no such relationship was observed for children. Future research should focus on cognitive and pragmatic factors that may impact the increased frequency of disfluencies in bilingual parent-child interactions, at the "turn-taking," morpheme, and syllabic levels.

Bi-/multilingual acquisition in typically developing children

07/19/2024

Modeling Dimensionality in Bilingual School-age Students' Language Using a Bottom-Up Approach

Joseph Hin Yan Lam; Alejandro Granados Vargas; Lisa Bedore; Elizabeth Peña

The degree of shared variance within and across different language domains in bilinguals remains unknown. While some researchers theorize a general language learning structure for bilingual children to acquire two languages, some theorize separated and language-independent structures in explaining cross-language transfer and development. This study used structural equation modeling to investigate the dimensionality of language in Spanish-English bilingual school-age children. A series of seven theoretical models were compared, including (1) a unidimensional model; (2) a two-dimensional model by language only (Spanish, English); (3) a two-dimensional model by domain of language only (semantics, morphosyntax); (4) a four-dimensional model organized by domain first and then language; (5) a four-dimensional model organized by language first and then domain, (6) a four-dimensional model organized by separated language domains; and (7) a twelve-dimensional model organized by separated latent language knowledge. 710 Spanish-English bilingual school-age observations, aged from seven- to eleven-year-old, were retrieved from two datasets. All participants completed a battery of semantics and morphosyntactic test items in English and in Spanish. The four-dimensional model organized by domain first and then language (with morphosyntax and semantics at level one, then Spanish and English at level two), and the twelve-dimensional model organized by separated latent language knowledge (with separate factors of functional properties, categories, reasoning, verb morphology, noun morphology, and syntax in English and Spanish) provided the best fit for the data. The good model fit is supported by findings of a χ^2 to df ratio <2, CFI > .90, SRMR <.08, and RMSEA values ≤.05. The results support emergent theories of bilingual language development, suggesting language is increasingly multidimensional across ages. Application of the results to the evaluation and intervention of oral language abilities in bilingual children is discussed.

Bi-/multilingual acquisition in typically developing children

07/19/2024

The role of word properties in monolingual and bilingual early word learning in L1

Magdalena Krysztofiak; Grzegorz Krajewski; Katarzyna Bajkowska; Ewa Enfer; Magdalena Łuniewska; Karolina Muszyńska; Michelle White; Nina Gram Gramann; Ewa Haman

"Previous studies have found that psycholinguistic properties contribute to the age of word acquisition – words that are more frequent, concrete, imaginable, or associated with babies are acquired earlier. These effects have been found across several languages (Braginsky et al., 2019). Moreover, recent findings suggest that preschool

children who acquire two languages may be more sensitive to word properties than their monolingual peers (Łuniewska et al., 2022). However, these effects have not yet been studied in Polish monolinguals and bilinguals below the age of 4 years. The aim of the study was to investigate predictors of early word learning in Polish monolingual and Polish-Norwegian bilingual children in their L1 using data from Polish adaptations of Communicative Development Inventories (CDI) (Smoczyńska et al., 2015).

The study includes data from three sources. First, the psycholinguistic database, developed by collecting ratings for 700 CDI items from over 1900 adult Polish speakers. Each participant rated 100 words in terms of one property: concreteness, babiness, imageability, subjective frequency or subjective age of acquisition. Second, the Polish CDI norming data from the parents of more than 3,500 monolingual children aged 8–36 months. Third, the data from parents of bilingual Polish-Norwegian children aged 18–36 months. Data collection from bilinguals is in progress (current N = 193). In our initial analysis with monolinguals, we fitted a logistic regression model to item-level data from CDI to investigate the contribution of each word property to the age at which children acquire the word. Results indicated that word frequency, concreteness and babiness were positively related to how often parents reported their children to know the word. As a next step, we plan to extend our analysis to bilingual children, focusing on their L1 (Polish). The study will allow us to investigate mechanisms of early word learning in a new language and population."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Using the MMN intervention to boost microstructure and fluency in Catalan in unbalanced bilinguals

Joel Espejo-Alvarez; Júlia Florit-Pons; Claire Luong; Alfonso Igualada; Pilar Prieto

"Narrative-based interventions have been shown to improve children's oral narrative abilities, as well as to trigger gains in written narration and academic outcomes. Despite this, most interventions have been implemented in English-speaking countries and with monolingual children. Other sociolinguistic conditions and languages have been overlooked, such as officially bilingual communities with more than one societal language and with a variety of language dominance situations. The goal of the present study is to investigate the impact of a novel narrative-based intervention, the MultiModal Narrative (MMN; Florit-Pons et al., in prep.), on improving the quality and frequency of use of Catalan in the narratives produced by preschoolers residing in the Spanish-dominant area of L'Hospitalet de Llobregat, Catalonia, Spain.

The MMN intervention was implemented with two groups of 5-to-6-year preschool children (n = 85; M = 5.4 years, SD = 0.35), one receiving the narrative-based intervention, and the other being the control group following treatment-as-usual. Before and after intervention, children recounted three stories. We analyzed all narratives using microstructure measures, including total number of words (TNW), number of different words (NDW), and speech fluency, in both Catalan and Spanish.

Preliminary results with 59 children showed that the experimental group significantly increased narratives' TNW and NDW in Catalan after the intervention, regardless of language dominance. A complete microstructural analysis of the three stories and an analysis of utterance fluency from the whole sample will be presented at the conference.

This study is pioneering in examining the impact of a narrative intervention in the use of Catalan in a sociolinguistic setting where the language is the official but non-dominant language. The results have theoretical and pedagogical implications, as they inform on the development of narrative competence in languages other than English, on the field of narrative interventions and on best practices for bilingual education"

Bi-/multilingual acquisition in typically developing children

07/19/2024

Quantifying multilingual children's language input at home using the Experience Sampling Method

Elise van Wonderen; Kimberley Mulder; Dirk Vet; Josje Verhagen

"Multilingual children's amount of input to each of their languages is one of the key factors for understanding their language acquisition trajectories. For practical reasons, amount of input is typically assessed through caregiver surveys (Kašćelan et al., 2021). In the current study we investigate the reliability of input estimates obtained from such surveys by comparing them to estimates obtained via the Experience Sampling Method (ESM). In ESM paradigms, participants complete brief surveys multiple times a day, often over the course of several days. It is a widely used method in psychology and medicine to reduce the bias of summative recall

(Arndt, 2023). In our study, we collect data from families in the Netherlands who speak more than one language at home and have a child between the ages of 3 and 9. At the time of writing this abstract we have collected data from 18 families (planned sample size = 50). In the study, caregivers first fill out a survey based on the commonly used Q-BEx survey (De Cat et al., 2022). Second, they fill out a shorter version of this survey on their mobile phone five times a day for seven days. Then they complete the first survey again. Finally, children complete a receptive and productive vocabulary task in English and/or Dutch (if these languages are spoken at home).

Our research questions were:

(i) How do language input estimates from the one-time survey correlate with those from the ESM surveys?

(ii) Which of these input estimates (one-time survey vs. ESM) correlate better with children's vocabulary scores?

(iii) What is the test-retest reliability of the one-time survey?

Answering these questions will not only shed light on the reliability of input estimates obtained from typical, oft-used caregiver surveys, but also on the potential of using ESM for research on (child) multilingualism."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Assessing for Developmental Language Disorder in the Context of African American English

Monique Mills; Isabelle Francois; Nan Bernstein Ratner; Stefanie Lapka

This structured review answers the following clinical question: For young African American English (AAE) speakers, how useful is the Developmental Sentence Scoring (DSS) compared with Index of Productive Syntax (IPSyn) in identifying developmental language disorder (DLD) in the presence of AAE? To answer the question, we searched the following databases: PsychInfo, Education Source, Education Resources Information Center, Communication & Mass Media Complete, PubMed, Scopus, and ASHAWire. Our search terms results in 3 studies. Our results indicate that DSS and IPSyn appear to be dialect-neutral measures of morphosyntax in young AAE speakers. DSS was better able to detect morphosyntactic differences between children with typical language development and children with DLD. DSS and its variant, Black English Sentence Scoring (BESS), appear to be clinically useful language sampling analysis tools. We conclude that available evidence suggest that DSS is a more useful clinical tool over IPSyn for evaluating DLD within the context of AAE because it provides the opportunity to evaluate mastery and accuracy of grammatical features and not only the presence of structures.

Bi-/multilingual acquisition in typically developing children

07/19/2024

Teleassessment of Hong Kong Trilingual Children

Jiangling Zhou; Mengyao Shang; Hecheng Zhang; Virginia Yip

"This study utilized telepractice to assess the language proficiency of trilingual children exposed to Cantonese, English and Mandarin in Hong Kong. Assessing vocabulary remotely via videoconferencing with 57 Cantonese-speaking children (age: 49-72months, M=59.9) learning English and Mandarin as second languages, we identified key procedures for effective teleassessment and explored the relationship between proficiency and input in trilingual children.

Children's English and Mandarin vocabulary was assessed using the Peabody Picture Vocabulary Test-5 (Dunn, 2018) and Mandarin Receptive Vocabulary Test (Chan et al., 2014), alongside semantic fluency tasks measuring productive vocabulary depth. Nonverbal intelligence and executive function (EF) were measured using Raven's Progressive Matrices and a digit span backward task. All assessments were conducted via Zoom, with modifications to procedures such as instructions and response formats to optimize telepractice delivery. Language background and input data were collected through parental/teacher reports.

While kindergarten English/Mandarin exposure was similar across children, those with additional English exposure at home had larger vocabularies than those without (t(55)=-2.494, p=.016). Performance in Mandarin was not affected by reduced exposure, as children with/without additional home Mandarin input scored similarly. While home English input correlated with English vocabulary (rs=.302, p=.023), input was not a significant predictor of English/Mandarin performance when factoring in age, nonverbal intelligence and EF. EF

positively predicted semantic fluency in English (b=.313, t=3.77, p<.001) and Mandarin (b=.275, t=2.673, p=.01).

Using tailored procedures, teleassessment offered a viable method for assessing children, especially in contexts that preclude face-to-face assessment. Our findings indicate that home English exposure provided benefits beyond classroom instruction for vocabulary development in English, whereas Mandarin vocabulary appeared resilient to variations in home Mandarin exposure, suggesting positive transfer due to similar cognates in Cantonese. The findings also suggest that EF skills are an important predictor for developing semantic fluency in multiple second languages during early trilingual development."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Child-directed speech and language socialization in Wixarika-Spanish bilingual families

Wendy Lara

"This study examines the child-directed speech (DS) as part of the language socialization of four Mexican children from bilingual families with speakers of Wixarika and Spanish. We analyzed the number of utterances, the pragmatic functions of utterances and the type of activity the families were engaged in.

8 hours of linguistic interaction between the families and the children were taken from the DABIWE corpus, obtained through an ecological methodology and transcribed in ELAN. Data was collected during two different stages of development: 1.0-2.10 and 4.0-5.0 years of age.

There was a variation in the socialization dynamics of families when addressing the child for the two periods. The linguistic interaction was modified depending on the activity the families carried on. The number of family members also influenced the amount of input and language preference. Interaction between peers (siblings or friends) was predominantly in Spanish, while caregivers alternated between the two languages when speaking to the children. However, in both stages the frequency of DS in Spanish was predominant (f=2865) with respect to Wixárika (f=1239). In the analysis of the pragmatic functions of DS in the two periods, there was a preference for imperative (f= 480), followed by interrogative (f=313) and affirmative (f=110) forms, with little presence of vocatives (f= 10) in Wixárika. As for Spanish, there was an inclination towards affirmative (f=995) and imperative forms (f=782), followed by interrogative forms (f=764) while few vocatives were used (f= 92).

It was found that the number of utterances elicited by children in Wixarika slightly increased (from 207 in stage one to 213 in stage two) while in Spanish it doubled (from 837 to 1698). This expansion of utterances is explained by the chronological development but it does not account for the language preference."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Play, read, learn: Parent-child codeswitching across contexts

Emma Libersky; Caitlyn Slawny; Emily Bagan; Margarita Kaushanskaya

Bilingual families may codeswitch (i.e., use multiple languages) in conversation. Language profiles and demographic factors impact codeswitching in parent-child interactions, but we know little about how individuals codeswitch across different activities. Moreover, it is unclear what activities parents reflect on when they self-report codeswitching. We asked how context (i.e., free play, bilingual book reading, and word learning) modulates children's and parents' codeswitching behavior, and how parents' observed behavior correlates with their self-reported codeswitching frequency. Spanish-English bilingual parent-child dyads (N=42; 36 moms ages 23-46years; 24 girls ages 4-5years) interacted across three contexts in the language(s) of their choosing. Interactions took place in lab and were transcribed. Codeswitching rates for each individual were calculated as their total number of codeswitches divided by their total number of utterances. Parents also estimated their global codeswitching frequency. To assess the relationship between context and codeswitching, we regressed codeswitching rate on context, children's language ability, and their interaction, accounting for nonindependence and multiple comparisons. We analyzed child and parent data in separate models, including a self-reported codeswitching and context interaction for parents. Context was a significant predictor of codeswitching for both children and parents. Post hoc comparisons indicated that children codeswitched more during play than reading or learning. Parents codeswitched more during play and reading than learning, but rates during play and reading were similar. Parents' self-reported codeswitching was positively related to observed codeswitching during play and reading but not learning. These findings indicate that context modulates

codeswitching in both children and their parents, albeit in somewhat different ways. Moreover, parents seem to draw on certain contexts more than others when reporting codeswitching behavior. Next steps include investigating how codeswitching type and direction vary across contexts and how these differences might impact language trajectories.

Bi-/multilingual acquisition in typically developing children

07/19/2024

Relationships between early bilingual experience and lexical-semantic development: an ERP study

Chih Yeh; Caroline Rowland; Sergio Miguel Pereira Soares

"Establishing label-concept mapping is an essential step in semantic network development. For bilinguals, building two different lexical-semantic systems simultaneously can be very complex. Previous behavioural findings have highlighted that 2-year-old bilinguals are already sensitive to semantic relatedness both within and across languages. However, the neural underpinnings of lexical-semantic network development in bilinguals awaits further investigation. Additionally, the contributions of individual differences (e.g., exposure, age of acquisition, proficiency) to bilingual lexical-semantic development in the brain remain less clear.

The current study employs a within- and across-language semantic priming paradigm, using ERPs to examine the online semantic processing of bilinguals at different ages within and across languages. This study probes bilingual development by addressing the following questions: What are the underlying neural mechanisms of bilingual children's semantic processing? Do bilingualism-related factors, such as the amount of exposure and language proficiency modulate brain responses? If so, how?

The study is ongoing; we are collecting EEG data when participants listen to related or unrelated word pairs within or across languages from 60 typical developing bilingual children aged 2-6 years in the German-Dutch/English-Dutch language contexts. Furthermore, we are assessing their bilingual language experiences by measuring proficiency and amount of exposure to both languages. Given these, we will use the N400, an index of semantic processing and meaning retrieval, to investigate semantic priming effects within and across languages, and examine to what extent individual differences predict N400 amplitude in different conditions. We predict to observe a comparable N400 effect within and across languages in more balanced bilinguals. The N400 effect is anticipated to be more prominent in older bilingual children (4 to 6 years), with its amplitude jointly modulated by the exposure and proficiency to two languages.

Overall, this study will highlight how early individual neural representations develop in bilingual lexical-semantic systems within and across languages."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Intrasentential code-switching patterns in Spanish-speaking English learners

Giovanna Morini; Julie Schneider; Aquiles Iglesias

"Background: A common feature of English Learners' (ELs) language development involves code-switching (CS) between languages. Several studies indicate that the amount of CS changes as children's first (L1) and second (L2) languages develop. Despite a considerable amount of research examining CS patterns among ELs, no studies have explored how these changes evolve and manifest themselves in structured academic, non-conversational tasks. The current study measured the number of CS produced by 195 neurotypical Spanish-speaking ELs on narrative recall tasks (in Spanish and in English) as they transitioned from kindergarten through 2nd grade.

Method: Participants were selected from a larger project that investigated the potential sources of variability in literacy skills among children living in the US, whose L1 was Spanish and were acquiring English as their L2. Narrative language samples in Spanish and English were elicited using a story retell task over a 3-year period, totaling six waves of data collection between the fall of kindergarten and the spring of second grade. Recordings of the sessions were transcribed, and measures of CS behavior (e.g., proportion of utterances in which the child code-switched) and expressive language skills (e.g., number of different words (NDW) and number of total words (NTW) produced in each language) were extracted.

Results & Conclusion: When completing the task in English, ELs were significantly more likely to CS into Spanish in Kindergarten, but by second grade, ELs code-switched into English significantly more when the task was in Spanish. The amount of code-switching to English in the Spanish task remained constant throughout. Importantly, only CS to English in the Spanish task, but not the opposite, was associated with EL's English language skills. These findings suggest that code-switching in school is highly dynamic, evolving as language proficiency changes over time. This work has important implications for guiding clinical and educational practices."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Emotional Language and Gesture Production in Bilingual and Monolingual Children

Hazal Civelek; Aslı Aktan-Erciyes; Tilbe Göksun

"Children's ability to talk about emotions is significantly influential on their social-cognitive development (Denham et al., 2003). Emotion understanding seems to be related to children's use of emotional words (Streubel et al., 2020). People use both verbal and gestural messages when talking about emotion concepts (Özder et al., 2022). Individuals also may also conceptualize and talk about emotions differently in a second language (Pavlenko, 2002). Less is known about how children learning two languages express emotions in speech and gesture. This study investigates the emotional talk and gesture use of 5- and 7-year-old L1-Turkish monolingual (N=59) and L1-Turkish-L2-English bilingual (N=49) children. Children were asked to narrate the story of the wordless picture book, Frog, where are you? (Mayer, 1969). Bilingual children narrated this story in both L1-Turkish and L2-English. Emotional talk during storytelling was coded depending on valence (negative and positive). Co-speech hand gestures that accompanied emotional utterances were also coded.

Two-Way ANCOVAs were conducted separately to see whether producing emotional utterances, negative and positive emotional utterances, and the gestures accompanying these emotional utterances in L1-Turkish change across language (monolingual vs. bilingual) and age groups. There were no significant differences across groups (ps > .05). A Two-Way Repeated ANCOVA was conducted to see whether negative emotional utterances change across language (L1-Turkish vs. L2-English) and age groups. There was a tendency towards using more negative emotional words in 5-year-old children's L1 compared to their L2.

These findings suggest that monolingual and bilingual children use similar emotional talk and gestures during narrative telling. However, the story may not have evoked emotionality and children's general emotion vocabulary knowledge was not measured to control. Future work should assess the relations among emotion vocabulary and concept knowledge with more controlled experimental stimuli."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Lexical and self-repair skills of 6-to7-year-old sequentially multilingual children in L2

Minea Tikkanen; Satu Saalasti; Minna Laakso

"Multilingualism is increasing, and multilingual language development differs from monolingual language development in many respects. Sequentially multilingual children are exposed to another language (L2) after learning their first language (L1) at home. Lexical skills are essential in language comprehension and production, and later literacy. In the developmental process, lexical skills are linked to the modification of one's own speech i.e., self-repair phenomena, such as adding, substituting, and searching for words. However, the relationship between self-repair and lexical development in multilingual children is quite unknown. Here we investigate both self-repair as natural conversational behavior and lexical performance of 6-to-7-year-old multilingual children in comparison to monolingual peers.

Comparison of multilingual children learning Finnish as a second language (n = 75) to native Finnish-speaking peers (n = 52) showed differences in lexical knowledge and self-repair phenomena between these groups. Lexical knowledge was studied with formal and standardized tests (Boston naming test, rapid automatized naming, verbal fluency task) and self-repair was analyzed from videotaped interactions in ELAN software using methods of conversational analysis. L1 children outperformed L2 children in all lexical tasks, including picture naming. L1 children made more self-repairs of speech than L2 children. Preliminary analysis showed longer self-repairs by L2 children than L1 children. L1 children used more lexical repair practices and added words to the utterances whereas L2 children searched for words and made substitutions. Preliminary results of this study support the previous finding that there are more hesitant vocalizations and pauses in self-repair and repairs take

more time in L2 than L1. All in all, self-repair practices of multilingual children in L2 Finnish at the age of 6 to 7 seem quite similar to those of their monolingual peers, but they differ in duration and quantity. The connections between self-repair phenomena and lexical skills will be discussed."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Parenting in a non-native language in Poland: are parents aware of children's language skills?

Magdalena Łuniewska; Magdalena Krysztofiak; Ewa Haman

"Parenting in a non-native language occurs when one (or both) parent(s) decide to communicate with their child in a language other than their native tongue (and different from the community's language). Neither the background nor the consequences of this phenomenon have been systematically studied. In one of the very few published studies, all interviewed parents who practiced parenting in a non-native language claimed to be satisfied with their children's language skills, however, no objective language assessment was reported (Romanowski, 2022). Here we verify whether such parents accurately judge the language skills of their children.

We recruited 31 parents (born and raised in Polish monolingual families) who decided to speak English to their children (aged 3;1 to 6;9). We collected data on Polish and English vocabulary of children with Cross-Linguistic Lexical Tasks (Haman et al., 2015). The parents assessed the overall language skills of their children with the Parents of Bilingual Children Questionnaire (Tuller et al., 2015). Previous research showed that the scores of the two tools correlate strongly (Abbot-Smith et al., 2018; Hansen et al., 2017).

We found that - contrary to previously studied migrant parents - parents who practiced parenting in a non-native language failed to accurately assess children's language skills. The assessment of the language skills was not correlated to the vocabulary score in either language (PL: rho = - 0.14, p > .95; EN: rho = 0.12, p > .60). In regression analysis, the vocabulary scores in the two languages were significantly related only to children's age, and not to the declared time of contact with the two languages or parental judgments of the language skills.

We conclude that although intensively engaged in developing the language skills of their children, parents who practice parenting in a non-native language cannot accurately assess the language abilities of their kids."

Bi-/multilingual acquisition in typically developing children

07/19/2024

Joint attention and contingent talk: a novel community language intervention for UK preschoolers

Nikki Botting; Helen Spicer-Cain

Background: Very young children from lower Socio Economic Status (SES) backgrounds often show poorer language development. Whilst there have been attempts to provide early intervention programmes, these sometimes miss the most disadvantaged groups. Aims: This report presents preliminary feasibility and effectiveness data for a novel language intervention designed for parents of toddlers in the UK. Methods and procedures: In total, 43 UK families of 2-4-year-olds were recruited to the study, half of whom completed an 8-week course (Tots Talking) focussed on parent interaction, and half of whom acted as wait-list controls. Results and outcomes: Results suggest that such programmes are feasible for families with 86% staying in the intervention. In addition, greater changes in underlying communication skills such as joint attention and gesture were evident compared to wait-list controls. Conclusions and implications: We conclude that pre-verbal skills may be more important to measure as initial outcomes than language or vocabulary change in this population. Community health professionals may find this information useful in referring and supporting families in need.

Developmental language disorders (DLD), SLI

07/19/2024

Social competence in French-preschoolers with and without developmental language disorder

Marylene Dionne; Stefano Rezzonico

Language and pragmatics are crucial for social participation. Children at risk of having developmental language disorder (DLD) may encounter challenges to fully socially participate at home or at daycare. Such social difficulties can take the form of internalizing or externalizing problems (Yew & O'Kearney, 2013). However, little data is available on social competence skills of young children with DLD and previous studies tend to indicate mixed results. The relationship between language, pragmatics and social competence deserves further

research especially at the preschool age (Durkin & Conti-Ramsden, 2007). This study aims to describe the relationship between social competence, language and pragmatics in French-speaking preschoolers. In total, 63 children aged 3-5 participated in the study, including 12 children who have been identified with DLD. Pragmatics was assessed with a parent-report (LUI-French), a structured symbolic play task (Neighborhood Game) and a personal narrative task. Lexical diversity (VOCD-D) and morphosyntax (mean length of utterance) were assessed using transcripts from the personal narrative task. Childcare educators of the children completed the French version of the Social Competence and Behavior Evaluation (SCBE). Results showed that children with DLD have more internalizing problems, specifically being adult-dependent in their social interactions, compared to their neurotypical peers. However, there was no group difference between children with and without DLD for externalizing problems. Results also showed that two subscales of the LUI-French (M – Conversations and N – Longer sentences and stories) and narrative abilities are associated with internalizing problems. These findings lay the foundations for a better understanding of social difficulties of preschoolers with a profile of DLD. They also support previous studies that have indicated that pragmatic skills play a crucial role in social competence, even at a young age.

Developmental language disorders (DLD), SLI

07/19/2024

The Trajectory of Word Recognition Skills & Vocabulary Knowledge in Developmental Language Disorder

Emily Zrostlik; J. Tomblin; Stewart McCauley; Si On Yoon; Philip Combiths; Kristi Hendrickson

Developmental Language Disorder (DLD) is characterized by difficulties in learning and using language and is one of the most common neurodevelopmental disorders (prevalence 7-12%). Children with DLD know fewer words, and the activation of familiar words decays faster than their typical language (TL) peers. The extent to which these basic level language deficits persist into adulthood is unknown. As a result, our understanding of DLD's progression – both in language profile and the mechanisms underlying deficits – is severely limited. The current study utilizes the most well characterized group of individuals with DLD and age-matched peers with TL in existence (the Iowa Longitudinal Cohort) to investigate the extent to which these word-level deficits progress into adulthood. Participants completed a spoken word recognition task using eye-tracking in the Visual World Paradigm. Four images appeared on the screen and participants were instructed to click the picture of the word they heard, while their eye-movements were tracked. To measure lexical decay, we calculated the proportion of fixations to the target image from word onset. Participants also completed the Peabody Picture Vocabulary Test – 5th Edition as a measure of receptive vocabulary. Preliminary results (TD=13, DLD=10) showed no significant difference in how activation for familiar words decays between groups, $t(20) = 1.2$, p =.25. However, adults with DLD continued to demonstrate deficits in receptive vocabulary, $t(9.87) = 2.54$, p<.05. Research on word recognition in typical language shows that familiar word processing continues to develop into young adulthood (16-20-years), whereas vocabulary knowledge plateaus much later (65-years). These typical trajectories are reflected in our current result. Our findings show that early deficits in familiar word recognition in children with DLD resolve as familiar word recognition plateaus, whereas their vocabulary does not "catch up". We discuss the implications of these findings in our poster presentation.

Developmental language disorders (DLD), SLI

07/19/2024

Dynamic assessment for the diagnosis of developmental language disorder in children: A rapid review

Pauline Menjot; Annick Comblain; Anne-Lise Leclercq

"Currently, the diagnosis of developmental language disorder (DLD) relies on the use of static assessments that compare an individual's performance to a normative reference sample. Such assessments are susceptible to biases that can affect the diagnosis accuracy, particularly for individuals from diverse linguistic, cultural, and educational backgrounds. Dynamic assessment has emerged as an assessment method that can reduce the influence of these biases, since it focuses not on an individual's acquired skills, but on their abilities to learn. It is based on the assumption that children with DLD have lower learning potential, and its measure has proved relevant in differentiating between children with and without DLD. Despite this, dynamic assessment tasks are rarely used in practice. The aim of this rapid review is therefore to identify studies using dynamic assessment in the diagnosis of DLD in monolingual or multilingual children (aged between 0-18 years), in order to provide speech-language pathologists with an overview of current dynamic assessment tasks.

A rapid review methodology was used to achieve this objective. An extensive literature search was conducted through four bibliographic databases: Eric, Medline ALL, PsycINFO, and Scopus. The search strategy was adapted for each database and included all identified keywords and index terms. It focused on two concepts – dynamic assessment and DLD. Furthermore, the reference lists of all selected studies were manually searched for additional relevant articles. The selection of included studies and data extraction was performed by one reviewer. A second reviewer verified 20% of a random sample for accuracy.

The results of this review aim to identify, characterise and synthesise relevant information on study characteristics, design, outcomes in terms of diagnostic accuracy, language domains assessed, language(s) used in the dynamic assessment tasks, and participant characteristics. The current limitations of dynamic assessment tasks and possible improvements were discussed."

Developmental language disorders (DLD), SLI

07/19/2024

Measuring lexical diversity in discourse of children with and without DLD in free-play

Christine da Silva-Genest; Loïc Liégeois; Caroline Masson; Marine Le Mené Guigourès; Christophe Benzitoun

"Lexical diversity is one of the measures used to analyze spontaneous data (Finestach et al., 2020; Yang et al., 2022). This measure helps assessing the developmental level of children in a natural context. However, in French, there is a lack of reference data on typically developing children beyond 4;0 or 5;0 (Le Normand et al., 2008; Grégoire et al.,1984). Moreover, the interpretation of results is hampered by this lack, especially when assessing production of children with developmental language disorders (DLD).

Our aim is to fill this gap by assessing lexical development in French-speaking children with and without DLD using a lexical diversity measure. The study is based on a corpus of French-speaking children with different linguistic profiles (13 with DLD and 47 without) interacting with one parent during a free-play. Children are aged between 4;7 and 8;7. Lexical diversity was measured using CLAN's VOCD command (Malvern & Richards, 1997) for all words and according to grammatical categories. All results were observed both for the population as a whole and according to various factors (linguistic profile, age, school level).

The results show that the lexical diversity score increases with age and differences can be observed according to school level. Furthermore, children without DLD have a more diversified vocabulary than children with DLD. Differences observed between the two populations are highlighted for nouns and verbs. According to the literature (Leonard, 2014), children with DLD have more difficulty with the verb category, even at a later age. These results will contribute both to improve the literature on lexical development and to provide baseline measures of lexical diversity as a function of age and linguistic profiles. These data will be an important resource for speech therapists in both assessment and intervention (Klatte et al., 2022; Bernstein Ratner & MacWhinney, 2023)."

Developmental language disorders (DLD), SLI

07/19/2024

An Initial Trial of Parents Plus: An Intervention for Preschool Children with Developmental Language

Carol Scheffner Hammer; Julie Smith; Brook Sawyer; Annemarie Hindman; Julie Santoro

"Developmental language disorder (DLD) is the most prevalent disability in preschoolers. Without intervention, children with DLD are at risk for sub-optimal school readiness skills, later reading difficulties, and adult underemployment. Parents of children with DLD require training because their children need specialized language strategies. When parents are trained, children's language skills can improve. However, early intervention services for preschoolers in the United States are typically delivered in early childhood centers where parents are not physically present to learn strategies to help their children. As such, feasible parent trainings are greatly needed. To this end, we iteratively developed and tested Parents Plus (P+), an online intervention delivered through an app and remote practice-based coaching. This poster will report findings from a small randomized controlled trial (RCT) about P+'s effectiveness in improving children's language skills and its social validity.

Thirty-one parent-child dyads were randomly assigned to control (n = 15) or P+ intervention (n = 16) conditions. All children had DLD and were a mean age of 48 months. Dyads were racially/ethnically diverse, and parents had a range of educational levels. At pre-, post-test, and 3-month follow-up, children's language skills were assessed using the Clinical Evaluation of Language Fundamentals-P2, Test of Early Grammatical

Impairment, and play-based language samples. Parents received P+ completed a survey about the acceptability of the program's goals, content/procedures, and outcomes (i.e., social validity).

ANCOVA analyses revealed no statistically significant treatment effect for children's language skills at post-test or follow-up, which was not unexpected given the sample's lack of power. However, effect sizes uniformly favored Parents Plus over control, with medium to large effects (d= 0.54 – 1.25). Additionally, parents unanimously endorsed P+'s social validity. For instance, parents reported that P+ provided very helpful information; P+ fit into their daily routines; and they would recommend P+ to other parents."

Developmental language disorders (DLD), SLI

07/19/2024

Acquisition of adjectives in child-adult interactions: evidence from children with and without DLD

Marine Le Mene Guigoures; Loïc Liégeois; Christine da Silva Genest; Caroline Masson; Christophe Benzitoun

"In French, the acquisition of adjectives is barely described, compared with nouns and verbs. However, a few studies based on child-adult interactions (Kilani-Schoch & Xanthos, 2013 ; Fox, 2014) have shown that adjective acquisition is gradual and correlated to parents' productions. Children's first adjectives are parents' most frequently produced adjectives and are highly lexically specified. Later constructions emerge following the order of frequency in CDS. Regarding children with DLD, we only know that they tend to make more agreement errors (Royle & Reising, 2019), and we assume, based on observations in other languages (Davies, 2022), that their difficulties with morphosyntax or semantics may affect their acquisition of adjectives.

Our study aims at understanding how adjectives are used in French, both for children with and without DLD and their parents. It is based on the data of 11 children with DLD (5;2-8;5) and 38 without (4;6-7;5), video recorded during a play session with one parent. The utterances including adjectives were extracted and we observed, for children and adults, the proportion of adjectives among the total of tokens, the diversity of adjectives and the diversity of Adj.+Noun constructions. We also examined whether children's use of adjectives was consistent with the expected forms.

Our results show, among others, that adjectives represent only 2% of the tokens, both in children and parents' data, regardless of children's group or age. Lexical diversity is similar in the two groups of children, and children's most frequent adjectives are equivalent to adults'. We found that parents of children with DLD produce less diversified adjectives, and their Adj.+Noun constructions appear much more frozen than what is observed for parents of children without DLD. Our study could provide some new keys for speech therapists to work on children's skills and on parental guidance."

Developmental language disorders (DLD), SLI

07/19/2024

Unmasking Semantic Deficits: Examining the Time-Course of Automatic Spreading Activation in DLD

Ashlie Pankonin; Alyson Abel

"Many children with developmental language disorder (DLD) experience semantic deficits, which hinder their written and spoken language abilities and place them at increased risk for educational, social, and vocational challenges. Although the existence and impact of these semantic deficits in DLD are well-established, the mechanisms underlying the deficits are not yet identified. Prior research suggests that the time-course of automatic spreading activation (ASA), an unconscious cognitive-linguistic mechanism underlying semantic processing, is altered in children with DLD, which could contribute to their semantic deficits. However, limitations in the methodology used in those studies prevent direct and unconfounded examination of the time-course of ASA, resulting in an unclear understanding of its alteration and its relationship with semantic deficits in DLD.

This study investigates the time-course of ASA in school-aged children with DLD and children with typical language (TL) using electroencephalography (EEG) and a masked repetition priming paradigm with two different prime-target interstimulus intervals (ISIs). Data collection is ongoing, with a target sample of 30 children (15 with DLD, 15 with TL) aged 8 to 14 years. EEG data are collected as participants see sequentially-presented prime and target words and complete a go/no-go semantic categorization button-press task. Critical trials consist of prime-target pairs of repeated non-animal words and prime-target pairs of unrelated non-animal words. A longer and shorter ISI is created by varying the backward mask's duration. We predict that analysis of the N400 event-related potential component, which reflects lexico-semantic processing and when that

processing is facilitated by priming, will reveal that children with DLD will show priming effects at only the longer ISI, unlike their TL peers who will show priming effects at both shorter and longer ISIs. This pattern of findings would suggest the alteration in children with DLD's time-course is atypically slow spreading activation, partially explaining their semantic deficits."

Developmental language disorders (DLD), SLI

07/19/2024

"I Say 'Em Too Wrong": Negative Emotion Frequency in Children with DLD During Word Learning Tasks

Taylor Berrier; Dawna Duff; Suzanne Adlof

Children with developmental language disorder (DLD) experience increased risk for emotional problems compared to children with typical development (TD). It is possible a shared neurobiological mechanism underpins both DLD and mental health disorders and leads to emotional problems across many contexts. Alternatively, prolonged linguistic struggle may elicit negative emotions for children with DLD more often than children with TD during learning. These accumulating experiences may exhaust emotion regulation resources of children with DLD and lead to mental health problems. This study took an initial step in examining contributions of difficult linguistic contexts to emotional problems in DLD by investigating the frequency of negative emotions displayed by children with DLD as compared to children with TD during a difficult spoken word learning task. Sixty second-grade children (nTD=30; nDLD=30; aged 7:10 to 10 years; monolingual English-speaking) were exposed to novel pseudowords paired with illustrations of unfamiliar objects and descriptions of both visible and invisible semantic features associated with the objects. Following each round of instruction, participants were asked to recall the "name" of each object and to "find" it within an array. Feedback on accuracy was provided (e.g., "right" and "oops"). Recorded video footage is being reviewed and double-coded for behaviors that indicate negative emotions, with coders blind to participant groups. Planned analyses will examine (a) group differences in the observed rate of negative emotions and (b) the correlation between the number of words recalled correctly and the rate of negative emotions. We hypothesize children with DLD will display negative emotions at a significantly higher frequency than children with TD, and the number of words recalled correctly will correlate negatively with frequency of negative emotion. Results of this study will be discussed alongside other possible contributors to the development of socioemotional problems in children with DLD.

Developmental language disorders (DLD), SLI

07/19/2024

Differences in Nonword Repetition Persist into Adulthood with Developmental Language Disorder

Philip Combiths; Kristi Hendrickson; Stewart McCauley; Si On Yoon; Adrian Bradley; Emily Zrostlik; J. Bruce Tomblin

Developmental language disorder (DLD) is a common developmental disability known to negatively impact language acquisition. Despite its prevalence and the body of research pertaining to this disorder in children, little is known of the trajectories for children with DLD beyond school age (i.e., into adulthood). Further, nonword repetition tasks have been shown to differentiate children with DLD from those with typical language development (TD). Performance in nonword repetition is informative, in part, because it has been associated with a host of cognitive-linguistic constructs, including phonological working memory, phonological encoding/representation, speech-motor planning, and lexical knowledge. Yet, the nonword repetition performance of individuals with a history of DLD beyond childhood is unknown, as is its utility as a diagnostic tool beyond school age. The Iowa Longitudinal Project is a seminal investigation that followed several hundred children with TD or DLD from kindergarten (e.g., Tomblin et al., 1997) into adolescence. We present preliminary data from an ongoing follow-up investigation with this cohort of participants, now well into adulthood. Preliminary results from productions on a nonword repetition task by adults with TD or DLD indicate that adults with DLD continue to demonstrate statistically and clinically significant differences in performance when compared to adults with TD. Adults with DLD demonstrated more global errors in phoneme production on the task, as compared to their peers with TD. Further, performance differences between groups with DLD and TD were impacted by task demands (i.e., phonological and prosodic complexity), such that differences between groups were largest in complex contexts (i.e., consonant clusters, syllable codas, and longer words). The implications of these results are discussed as they relate to psycholinguistic aspects of typical and atypical language development and the diagnosis and management of DLD across the lifespan.

Developmental language disorders (DLD), SLI

07/19/2024

Engage with Developmental Language Disorder (E-DLD): Participant characteristics

Michelle St.Clair; Nikki Botting; Suze Leitao; Emily Jackson

"Awareness of Developmental Language Disorder (DLD) is lower than other neurodevelopmental disorders, despite its high prevalence of 7.6%. DLD is both underfunded and under-researched. Engage with Developmental Language Disorder (E-DLD; https://www.engage-dld.com/) is the first international participant database of those affected by DLD. Parents of children with DLD under 16, young people and adults over 16 from anywhere in the world can sign up to be a part of the E-DLD database.

E-DLD members report demographic characteristics at the time of sign-up. All E-DLD members subsequently are invited to fill in a yearly survey. The content changes dependent on the age of the child, while the yearly survey for adults remains consistent. We measure a wide range of domains, including speech-therapy support, school support, socialisation skills, and early developmental milestones for our youngest members, as well as healthcare support and mental-wellbeing measurements for our adults. We also collect parent and self-reported reflections on strengths and challenges for the person with DLD using open ended questions and questionnaires.

As of mid 2023, the database consists of 242 parents of children with DLD and 35 individuals over the age of 16 with DLD or suspected DLD across a range of SES backgrounds. Our initial results confirm that E-DLD members meet the linguistic profile of DLD in relation to self- or parent-rated language difficulties. Both children and adults show increased rates of psychosocial difficulties compared to established norms, consistent with past research on clinical samples of people with DLD. The rates of emotional, behavioural and sleep difficulties among the child probands are higher than reported rates amongst typically developing children. Initial data indicate that adults with DLD have poorer wellbeing than their peers. Our findings show that the E-DLD database is a useful way to collect information and connect people with DLD with research."

Developmental language disorders (DLD), SLI

07/19/2024

Language Development's Influence on Executive Functions in Middle Childhood

Elisabet Serrat; Francesc Sidera

Some theoretical approaches suggest that language development is more important for executive function (EF) skills than vice versa (Winsler et al., 2009). This relationship may be particularly relevant in developmental language disorder (DLD) and deaf/hard of hearing children (DHH), where EF deficits may be related to certain language properties (Camminga et al., 2021). The present study focuses on the relationship between language development and EF in middle childhood and includes comprehension and syntactic production, which have been less studied in this area.
Seventy-six children (8-11 years of age) participated in the study (nTD = 23; nDHH = 23; nDLD = 30). No differences were found between groups by age or by non-verbal IQ. The following language tasks were administered: expressive vocabulary, sentence comprehension and sentence expression; as well as three EF tasks: visual WM, verbal WM, and inhibition.
Significant correlations were found within each group between visual and verbal WM and sentence comprehension and expression, but not with vocabulary or inhibition. Therefore, neither vocabulary nor inhibition were taken into account in the subsequent analyses.
In separate regression analyses of the two WM tasks on sentence expression or sentence comprehension scores, neither model was significant. Regression analyses of comprehension and sentence expression towards visual WM or oral WM showed that: a) for verbal WM: in the TD group both sentence comprehension and expression were explanatory (adjR2 = 0.315); in DHH children only sentence comprehension was explanatory (adjR2 = 0.246); no significance was found in DLD; b) for visual WM: only sentence comprehension was significant in the DHH group (adjR2 = 0.186).
The results of this study provide information on the influence of language acquisition on EF, suggesting that language skills are involved in performing EF tasks (Winsler et al., 2009). The results also are discussed in relation to the study groups.

Developmental language disorders (DLD), SLI

07/19/2024

Where do SSD and DLD overlap and diverge? Evidence from mismatches in Portuguese-speaking children

Jessica Gomes; Margarida Ramalho; Maria Freitas

Developmental Language Disorder (DLD) and Speech Sound Disorder (SSD) are two common pathologies characterised by deficits in language comprehension and/or perception, as well as difficulties in speech production, in the absence of an overt neurological lesion or known cause (Dood 2005; 2014; Bishop et al. 2017; Stringer et al. 2022). Following the publication of the CATALISE project (2017), a debate emerged regarding the possible overlap between the two disorders. The aim of this study is to contribute to the characterisation of DLD and SSD by comparing the types of speech sound errors produced by each clinical group. We will be focused on the alveolar lateral, considered by Speech and Language Therapists as the most problematic segment for Portuguese children (Reis, 2022). Our study provides quantitative and qualitative information on the occurrence and the types of mismatches for target /l/ produced by 8 Portuguese-speaking children with DLD (aged 4;11-5;11) and 7 with SSD (aged 3;02-6;00). Data were collected using an assessment test validated for EP and are available at PhonBank. Our results showed that, when children with phonological disorders did not produce /l/, they most often used [w]. Furthermore, children in the two clinical groups had more difficulties with complex syllable structures: mismatch patterns reflected negative structural constraints (deletion of C2 or deletion of coda) rather than segmental constraints (substitutions). Finally, we observed that, in contrast to children with DLD, children with SSD had a greater tendency to delete weak syllables. The discussion of the data includes a comparison with results available in the literature on the most common repair strategies in typical and atypical phonological development (Velleman, 2002; Lousada, 2012; Miccio & Scarpino, 2008; Dodd et. al. 2017; Biran et al., 2022).

Developmental language disorders (DLD), SLI

07/19/2024

The shared book-reading corpus: Annotated video dataset of caregiver-infant multimodal interactions

Teruni Ahamat; Suzanne Aussems; Sotaro Kita

Shared book-reading is an activity that caregivers and infants engage in together from the first year of life. Infant-directed speech during shared book-reading facilitates early vocabulary development. However, less is known about infant-directed gestures in this context. To test the hypothesis that gesture plays an important role during shared book-reading, we are developing an annotated corpus of video recordings of caregivers and their infants (aged 12-months) reading a picture book together in the research lab. We also collect data about infants' receptive vocabulary size using the UK-CDI. Our target sample is 40 dyads (as of the date of this submission, we have pilot-tested 11 so far). This corpus is unique in that we video-record the caregiver's hands in a close-up shot during the book-reading. We are annotating the infant-directed speech and infant-directed gestures in the recordings. We will investigate how gesturing while labelling is related to infants' vocabulary development. We will analyse two gesture types in relation to labelling: pointing and iconic gestures. Caregivers can point to the object they are labelling, which is useful for infants' word learning. This is because pointing reduces referential uncertainty when there are multiple pictures on a page. Our pilot study shows that caregivers also produce iconic gestures during shared book-reading. For example, when labelling a picture of a car, caregivers pretended to steer a wheel from side to side using their hands. Iconic gestures may also reduce referential uncertainty and aid word learning because they depict semantic information about a referent. We predict that both caregivers' pointing gestures and iconic gestures are positively related to infants' receptive vocabulary size. We aim to present the development of the shared book-reading corpus, as well as a preliminary correlational analysis (N = 20) of the multimodal nature of shared book-reading and vocabulary development.

Early language comprehension in infants and toddlers

07/19/2024

A coding manual for infants' nonverbal behaviors during looking time experiments

Suzanne Aussems; Sotaro Kita

Traditional infant looking time experiments in language development research often involve a dependent variable that is operationalized as looking time towards a stimulus. This variable is then analyzed to investigate whether infants look longer at certain stimuli when hearing certain words. Using eye gaze as an implicit measure in linguistic tasks is a clever way to elicit data from prelinguistic infants who observe but do not speak. However, this measure is also limited, because it cannot unambiguously demonstrate referential understanding, which is a pivotal element of linguistic competence. Specifically, an implicit measure cannot distinguish

between two cognitive processes: a low-level process where infants like to look at a stimulus when they hear a certain word, and a high-level process where infants understand that the word they hear refers to the stimulus they see (i.e., referential understanding). To resolve this, we propose a new method for probing infants' linguistic knowledge via explicit nonverbal behaviors indicative of referential understanding (e.g., pointing to a word's referent). We analyzed video-recordings of forty 13-16-month-olds (19 girls, Mean age=14.84 months) who participated in a looking time experiment. Besides looks towards the stimuli, all infants frequently produced social looks (n=2831, e.g., looks towards their caregiver), gestures (n=646, e.g., points towards the stimulus, attempted grasping, attention-getters, tapping), and vocalizations (n=455, e.g., babble). Our contribution is an openly available coding manual and ELAN template with tiers for LOOKS, GESTURES, and VOCALIZATIONS. Our poster will describe the development of these resources and report how frequent nonverbal behaviors occurred in our empirical data. We conclude that infants produce many nonverbal behaviors during looking time experiments, which could be analyzed in addition to traditional measures to strengthen future studies of infants' linguistic competence. Ultimately, this could lead to a better understanding of the cognitive processes that underpin language development.

Early language comprehension in infants and toddlers

07/19/2024

Teacher talk as supporting child-directed speech – evaluation of a professionalization measure

Katharina Rademacher; Anja Starke

"Teacher talk as child-directed speech in a school setting is an essential tool for integrating language support into teacher-pupil interactions. Everyday-integrated language support provides numerous benefits for pupils' language skills. However, in reality, numerous primary school teachers do not routinely implement language support strategies. Thus, there is a need to raise awareness and conduct professionalization measures. To promote professional competencies, such measures require not only theoretical knowledge transfer but also practical trials and systematically promoted theory-based reflection. Within university classrooms, student teachers can acquire both theoretical knowledge and practical experience in a guided and complexity-reduced setting. Thereby, theory-guided, video-based self-reflection can support this professionalization process. Several general didactic teaching concepts are available to iteratively promote professional performance competencies. However, there is a lack of concepts that focus on promoting language support competencies.

The research project aims to create and evaluate a seminar concept that enables student teachers in inclusive education to enhance their reflective as well as their language support competencies through theory-based lesson design, practical trials in the university classroom, and video-based reflections and feedback.

With an online survey, we recorded the reflective and language support competences of students (n = 15) in a pre-post design. After viewing a teaching video, the students were instructed to give written reflections regarding the teacher's language support competences. Language support competences were assessed with the SprachKoPF questionnaire (instrument for standardized assessment of language support competence of pedagogical professionals) for the competence levels "knowledge" and "skills". The "performance" level was determined via video-content analysis of the students' language support activities. Additionally, the students composed a video-based self-reflection after each of their own practice sessions. All outcomes will be subsequently integrated into a single-case oriented mixed-methods design.

The key results of the research project will be presented in the poster presentation."

Early language comprehension in infants and toddlers

07/19/2024

Speech Production and Perception Assessment: An Instrument Proposal

Susana Rodrigues; Juzidmara Pontes; Marta Chainho; Marta Fernandes; Sofia Lima; Ana Baptista

"Background: Speech perception skills in children with Speech Sound Disorders (SSD) have been studied for decades, however, questions remain regarding understanding the nature of perception difficulties in these children and their relationship with speech production. There are only a few instruments available for assessing perception in European Portuguese (EP) and have limitations that hamper an adequate understanding of this issue.

Aim: The objective of this study is to present a proposal for an instrument to assess the speech perception and production in the EP.

Procedures: The instrument design involved three main procedures: i. literature review about the topic; ii. survey and analysis of the instruments for EP; iii. construction of an instrument to assess speech production and perception in EP considering the importance of the contrast selection to be evaluated; stimulus selection; instrument operationalization and establishment and criteria analysis).

Results: The instrument designed includes two different tests: one that assesses the speech production of 32 stimuli, by naming the images; and the other that assesses the perception of 33 contrasts, covering all fricatives and stops segments for EP. The tests are presented with computer support, with control of prosodic, volume, and image aspects. The children's performance will be recorded in the protocol, and the data will be analyzed quantitatively and qualitatively.

Conclusions: A detailed assessment regarding production and perception skills contributes to more accurate and efficient diagnoses and interventions for children with SSD."

Early speech perception and production: infants and toddlers

07/19/2024

Early language interventions for preterm toddlers – preliminary findings of systematic review

Anna Markkula; Suvi Stolt; Riikka Pyhälä-Neuvonen

"Background and aims: Preterm children (born <37 gestational weeks; GW) have higher risk for linguistic delays than full-term peers. However, knowledge on early language interventions targeted for preterm children is scarce and their efficacy is rarely reported. Aims of this systematic review are 1) to identify language interventions among preterm born children aged 1–3 years and 2) to evaluate efficacy of the interventions.

Methods: From six databases, six studies (total N=1277 preterm children born at 28–37 GW) were identified by following the PRISMA guidelines. Efficacy of the interventions was investigated by calculating effect sizes of the language outcomes (Hedge's g; between-groups or within-subject design).

Results: Interventions targeted promoting parent-child interaction and child's language skills. One intervention focused on dialogic book-reading and another on object imitation, joint attention and play skills. All interventions produced statistically significant positive effects on general language skills or more precisely on receptive language or expressive syntactic skills. In four studies, the effect sizes (g) varied between 0.23 and 0.82 (between-groups design). One study compared autistic preterm children and their non-autistic controls. In this study the effect size was -2.18 when using between-groups design, but clearly higher in the intervention group (0.85) compared to the control group (0.40) when using the within-subject design. In one study the effect size could not be calculated.

Conclusion: Only six studies targeting language interventions of preterm children aged 1–3 years were detected. Identified studies were effective in supporting language development in this group. During early childhood children are in the sensitive period for language development due to brain maturation, and well-timed and targeted interventions would optimally prevent broader linguistic difficulties. However, more studies, particularly long-term follow-ups, are still needed."

Early speech perception and production: infants and toddlers

07/19/2024

Effects of music exposure and statistical leaning on infant lexical-tone perception development

Feng-ming Tsao; Yi-Chen LIn

"To learn words in a tonal language, infants need to develop perceptual abilities not only for consonants and vowels but also for lexical tones. While the perceptual development of lexical tones undergoes significant changes between 6 and 12 months of age, it remains unclear which developmental mechanisms facilitate infants to learn lexical tones. Domain-general statistical learning and cross-domain music-to-speech transfer learning effectively assist adults who speak non-tonal languages in perceiving lexical tones. Do these mechanisms have differing roles for infants learning a lexical-tone language and enhancing their perceptual sensitivity for lexical tones?

Three experiments investigated the effects of statistical learning and music exposure on lexical-tone perception development. Experiment 1 used the conditioned head-turn procedure to explore how Mandarin-learning 7- and 11-month-old infants (n=53) utilized distributional learning (either unimodal or bimodal) and music experience to discriminate the acoustically-similar native lexical tone contrast (Tone 2 vs. Tone 3). Music exposure

facilitated infants to distinguish lexical tones. However, only the 7-month-olds exhibited an advantage from bimodal distributional learning. Experiment 2 examined the effects of music exposure on musical melody discrimination. Both age groups (n= 72) detected musical interval differences better after the short-term music exposure, and 7-month-olds benefited more from bimodal distributional learning. Experiment 3 assessed the effects of statistical learning and music exposure on novel lexical tone learning in both age groups (n= 117). Both age groups demonstrated enhanced music tone discrimination after music exposure. Nevertheless, the distributional pattern (either unimodal or bimodal) of the musical continuum infants were exposed to had a negligible effect on their ability to distinguish musical melodies. This research not only highlights mechanisms of developing lexical-tone perception but also suggests cross-domain music-to-speech transfer learning benefits both 7- and 11-month-old infants. However, domain-general statistical learning effectively facilitates 7-month-olds in learning lexical tones."

Early speech perception and production: infants and toddlers

07/19/2024

Toddlers' Mouth-Looking to Talking Faces is Stable Across Languages & No Longer Predicts Vocabulary

Itziar Lozano Sánchez; Itziar Sánchez; Anna Duszyk-Bogorodzka; Zuzanna Laudańska; Ingeborg Sophie Ribu; Magdalena Szmytke; Agnieszka Dynak; Natalia Falkiewicz; Ewelina Fryzowska; Karolina Krupa-Gaweł; Lisa Laumann; Wiktoria Ogonowska; Cecilie Rummelhoff; Przemysław Tomalski; Nina Gram Garmann; Ewa Haman

"Mouth-looking supports language development in infancy (Belteki et al., 2022), but its role in toddlerhood remains unclear. A redeployment of attention to the mouth hypothetically benefits first-word acquisition, but is not observed in 14-18-month-olds (Hillairet de Boisferon et al., 2018). One untested hypothesis is that this benefit occurs later in the second year, because it may take that long for toddlers to efficiently use visual speech cues to learn words. Furthermore, the language expertise hypothesis predicts that toddlers, like infants, will look more to the mouth in unfamiliar vs. familiar languages to seek further helpful phonological-visual cues. We argue for the opposite because, after acquiring language expertise, toddlers may find it unhelpful to seek these visual cues in an unfamiliar language to learn words.

We hypothesized: (H1) More mouth-looking in older than younger toddlers only in the familiar language, (H2) Reduced mouth-looking in unfamiliar vs. familiar language in both age-groups, and (H3) Positive associations between mouth-looking and vocabulary skills in older toddlers and in the familiar language (https://osf.io/8br2h/).

We are currently cross-sectionally testing monolingual Polish and Norwegian 18 and 24-month-olds (n=85) with an eye-tracking task of selective attention to familiar and unfamiliar audio-visual speech, and a vocabulary inventory.

Analyses showed toddlers looked at the mouth equally across age-groups and languages, and no associations between toddlers' mouth-looking and their vocabulary skills in any language or age-group. Additional analyses revealed high intra-individual associations in mouth preference across languages and age-groups.

The redeployment of mouth-looking may not hold by the late second year, and may not be relevant for vocabulary development in toddlerhood, but is perhaps specifically constrained to infancy (Lozano et al., 2022). Stable individual differences across languages and ages in mouth preference replicate those of adults (Viktorsson et al., 2023), suggesting an already mature gaze pattern to talking faces in toddlerhood."

Early speech perception and production: infants and toddlers

07/19/2024

On the acquisition of /l/ by Portuguese children: naturalistic versus experimental data

Margarida Ramalho; Jéssica Gomes; Maria Freitas

Laterals are phonetically complex, sharing properties with plosives (constriction) and vowels (oral resonance) (Ladefoged & Maddieson, 1996). In European Portuguese (EP), /l/ is phonologically complex (Mateus & Andrade, 2000) due to syllabic distribution (singleton–livro ['livɾu] 'book'; C2 onset cluster–flauta ['flawtɐ] 'flute'; coda–relva ['ʀɛɫvɐ] 'grass') and allophonic variation (onset [l]; coda [ɫ], with velarization). Speech and Language Therapists (SLTs) report an increasing difficulty in the acquisition of /l/ by Portuguese children (Reis, 2022). Acquisition ages are set in assessment tests (Mendes et al. 2013; Guimarães et al. 2014) but little is

known on how children build the phonological representation of /l/. In this study, we compare data with different methodological profiles. Two samples of Portuguese monolingual children are considered (available at PhonBank): (i) 4 children from a longitudinal naturalistic study (LN), (age range 1;2-3;7); (ii) 87 children from an experimental cross-sectional study (EC), aged 3;0-6;6, organized by age groups: G1(3;0-4;0), G2(4;0-5;0), G3(5;0-6;6). In EC, success rates for singletons are surprisingly similar across age groups (G1: 63,5%; G2: 62;4%; G3: 66,1%). Codas (G1: 33,5%; G2: 46;1%; G3: 53,7%) and onset clusters (G1: 8,3%; G2: 24,7%; G3: 35,91%) show an extremely slow development. In LN, attempts for target singletons are early attested /l/ (see M at 1;5), but none of the children show acquisition rates for clusters at the offset of data collection. Mismatches in EC are mostly [w, Ø, ʋ] for singletons and codas, and vowel epenthesis plus [Ø, w] for clusters. Mismatches in LN include [w, Ø, b, t, d] for singletons, [Ø, w] for codas and vowel epenthesis plus [Ø] for clusters. LN and EC provide complementary evidence to characterize the problematic acquisition of /l/ in EP. The results are relevant for SLTs to set intervention plans that are coherent with natural pathways in typical development.

Early speech perception and production: infants and toddlers

07/19/2024

Norwegian preschool staff's mental state talk, children's Theory of Mind and Emotion Understanding

Monika Abels; Vårinn Nilsen; Gabriella Oturai

Previous research has found a relation between caregivers' child-directed speech and children's development of social cognition, for example their Theory of Mind and Emotion Comprehension. This research has mostly focused on the parents, and specifically the mother, as the child's caregiver. However, Norwegian preschool children spend a large amount of their everyday life with preschool staff as their caregivers, which illustrates the importance of understanding the relation between their child-rearing values and behaviors, and child outcomes. In this poster we will therefore assess the relation between preschool staff's usage of mental state talk and children's Theory of Mind and Emotion Comprehension. Participants are preschool children aged 3 to 6 years and preschool staff normally working with these children. We observe preschool staff's use of mental state talk during two different situation. In one observation the preschool staff receive a wordless book (Frog, where are you?) and are asked to tell a small group of children the story depicted in the book. The second observation is based on an everyday situation in which children get dressed in outerwear to go outside which is potentually stress-inducing. Children's Theory of Mind is assessed using a digital scale, based on Wellman & Liu, 2004. Emotion comprehension is assessed using the Norwegian version of the Test of Emotions Comprehension (TEC, Kårstad et al., 2015, Pons & Harris, 2000). We expect to find connections between cognitive aspects of mental state talk and Theory of Mind and emotional aspects of mental state talk and emotion comprehension. Data collection is ongoing in the fall of 2023.

Effects of language input and environment

07/19/2024

The Effect of Child Behavioural Characteristics in Parent-Child Reminiscing

Riikka Svane; Fabio Trecca; Dorthe Bleses; Erika Hoff; Brett Laursen

"Parent-child reminiscing is an important conversational context where children learn how to narrate their personal experiences. Parents who continuously extend the conversation with new semantic content in the form of elaborative questions and statements, have been shown to have children who provide more semantic content about their personal past experiences.

However, less is known about whether certain child behavioural characteristics (i.e., child prosocial behaviour, hyperactivity, or conduct problems) may enhance or mitigate the positive effect of elaborative reminiscing on the child's active verbal participation in reminiscing over time. For instance, differential effects of parental language input on child language outcomes have been detected for children high vs. low in hyperactivity and conduct problems.

The aim of the present study was to examine whether child prosocial behaviour, hyperactivity, conduct problems moderate the relationship between parents' elaborative reminiscing and change in children's active participation in past event conversations over time. Parent-child dyads (T1: N = 178; T2: N = 130) reminisced about shared past events at two time points, two years apart (child Mage T1 = 4.28, SD = 0.18; child Mage T2 = 6.25, SD = 0.45). Parents' utterances were coded for open-ended and closed elaborative questions and statements. Children's utterances were coded for subject-verb-utterances including unique information about the past event in topic. Child prosocial behaviour, hyperactivity, and conduct problems were measured using parent-report questionnaires.

There was a negative relationship between parents' elaborative reminiscing and children's active participation in past event conversation for children with above-average prosocial behaviour. For children with above-average conduct problems, there was a positive relationship between parents' elaborative reminiscing style and their active participation in memory conversation over time.

The results have important implications for understanding how children's behavioural characteristics affect to what extent they adopt the parent's elaborative style of narrating about their personal experiences."

Effects of language input and environment

07/19/2024

Language in Good Company: Peer Group Effects on Language Development

Franziska Hürlimann; Daniel Schmerse; Oliver Lüdtke

"Various environmental factors, including socioeconomic status (SES), home literacy environment, and aspects of preschool and school contexts have been identified as sources of variation in children's language skills. As children spend considerable time with their classroom peers, our study aims to investigate the potential impact of peers' language skills and average SES back-grounds on children's individual language development.

To address conflicting findings from prior research, we conduct an individual participant data (IPD) meta-analysis by integrating data from five German studies involving over 12,000 children aged 2 to 10 years in about 1,500 classrooms. All considered studies assessed receptive vocabulary at multiple time points with established test instruments. We apply a two-stage strategy. First, we specify the same multilevel regression models to individual datasets to estimate peer effects on language skills, controlling for baseline vocabulary scores, nonverbal cognitive abilities, and relevant sociodemographic variables. We also examine possible differential effects depending on family language, initial language competence, and SES. Second, we synthesize the effect sizes through meta-analysis.

Preliminary results from three datasets analyzed so far indicate no overall peer effect of average language skills when average SES is included in the model. Moreover, peers' average SES appears as a significant predictor of a child's language skills. Additionally, we find significant cross-level interactions between peers' language skills and children's individual baseline language skills as well as individual SES. This suggests that the relationship between peer average language skills and individual language skills is more pronounced when initial language proficiency and individual SES are lower. The forthcoming meta-analysis will provide a comprehensive picture of these associations.

Overall, the study contributes to clarifying the importance of peers in language development and highlights potential implications for policymakers and educators. The use of an IPD meta-analysis with consistent methods enhances the robustness of our findings."

Effects of language input and environment

07/19/2024

Investigating differences in the language development of twins and their younger siblings.

Emily Wood; Sophie von Stumm

"When raising twin siblings, as compared to singletons, parents must divide their attention between both children. Consequently, parents tend to have less opportunity for extended dyadic interactions with each twin, often addressing them as a pair, and being less responsive and more directive in their interactions than is the case with singleton children. Differences in language environment between twin and singleton children may contribute to delays in language development that are often observed in twins. This delay is evident from as early as age 20 months, and it ranges from 2 to 8 months. The twin language development delay may persist into later childhood, although existing literature is inconclusive on this point.

Here, we compare the language development of 275 twin pairs and their younger singleton siblings from the same families, who participated in a UK representative cohort study. These data allow direct comparisons between twins and singletons within and between families while accounting for genetic and socioeconomic differences. The children completed measures on vocabulary size, word use, sentence complexity and grammar, measured at ages 2, 3, 4, and 7. When comparing the language ability of the twins to that of the singletons in preliminary analyses, the twins' language development delay relative to singletons was evident at the ages 2 and 3 years, but disappeared and even reversed for some measures at later ages.

These findings suggest that twins' delay in language development relative to their singleton siblings is likely to result from parents' reduced opportunity for extended dyadic interactions with each twin."

Effects of language input and environment

07/19/2024

The role of word order and case-marking in acquisition of thematic role assignment in German.

Yevheniy Skyra; Rowena Garcia; Evan Kidd

To understand who-is-doing-what to-whom, children need to map agent and patient roles onto the words they hear. How children do this online is debated. In a language like German, our focus here, input-driven accounts of language acquisition predict that children will first make use of the most reliable cues to thematic role assignment in the input, which is word order, before they attend to the less reliable case cue (Bates & MacWhinney, 1989). Early abstraction accounts, however, postulate that children will rely on case-marking for thematic role assignment from an early age (Özge et al., 2022). Past research is mixed regarding which cues children use and whether their sensitivity to each cue changes across development. Although the majority of the studies suggest that preschool children first rely on word order before they use case-marking around the age of 7 years (e.g. Dittmar et al., 2009), one study reported that preschoolers could already use case-marking to assign thematic roles by the age of 4 (Özge et al., 2022). In this ongoing study, which is a conceptual replication of Özge et al. (2022), we use online (eye-tracking) and offline (sentence picture matching) tasks to investigate if 4- and 7-year-old children can use unambiguous case-marking to assign thematic roles or whether they rely on word order (first-noun-as-agent). An adult comparison group was also collected to identify the target state. In the experiment, participants heard unambiguously case marked sentences that manipulated word order (SOV versus OSV). Following corpus analyses which revealed word order to be a more reliable cue than case, we predict that 4-year-old children would solely use word order to assign thematic roles, and that case would only be reliably used by the 7-year-olds and adults. We expect to finish data collection this year.

Effects of language input and environment

07/19/2024

The Effects of Input Consistency on Children's Statistical Language Learning

Imme Lammertink; Merel van Witteloostuijn; Josje Verhagen; Judith Rispens

"Children learn linguistic structure from the input they receive. Their learning may depend on several factors such as children's sensitivity to structure in the input, prior language experience (monolingual versus multilingual) and the consistency of linguistic structures in the input (which, amongst others, depends on the language proficiency of the child's interlocutor). In this study we focus on the latter and assess how noisy input (substitution errors) in artificial languages affects children's learning of words and rules using a cross-situational learning task (CSL; Chen et al., 2017) and an auditory nonadjacent dependency learning task (A-NADL; Lammertink et al., 2019).

Data collection among Dutch-speaking children (8-11 years) is ongoing (current n = 77) and will be completed in the spring of 2024. The CSL task assesses children's learning of label-referent pairs (word learning) and their generalization of a morphophonological rule: animate objects are expressed through vowel harmony and -r word ending (pakar), while inanimate objects end in -ek (lapek). The A-NADL task assesses children's morphosyntactic learning of two nonadjacent dependencies (tep X lut, sot X mip). In both tasks, children receive consistent language input or input with substitution errors (CSL: 12.5% or 25% incorrect word endings, e.g. pakek, A-NADL: 13.3% incorrect nonadjacent dependency pair, e.g. tep X mip).

Preliminary, descriptive outcomes suggest that inconsistencies in the input may have a negative impact on children's word learning (CSL) and detection of nonadjacent dependencies (A-NADL). The outcomes for children's generalization of the morphophonological rules (CSL) are inconclusive: descriptive outcomes do not provide evidence that children (in any input condition) learned the rules. This study adds to the existing literature by showing how inconsistent language input affects different types of statistical language learning in children and eventually may inform us on how differences in the quality of children's language environments affect their language learning."

Effects of language input and environment

07/19/2024

Multicultural families' home and community language environment

Chen Zhao; Ludovica Serratrice; Thea Cameron-Faulkner

"The nature of the home and community language environment (HCLE), that is the linguistic context of a child's home and community has received much attention over the years in terms of its effect on developmental outcomes. However, the HCLE of minoritized groups remains under-represented in the literature meaning that important relations between home and community and developmental outcomes may be missed.

In part one of our ongoing study, we are investigating the nature and effects of the HCLE on school readiness in Chinese-heritage and Pakistani-heritage families with children between ages of 3 and 5 living in the UK, in comparison to British-heritage families. Families are asked to complete short questionnaires covering features of the HLCE (e.g. frequency of reading or playing at home, attending events together, languages used, screen device usage) and also parental child-rearing values, acculturation status (for the non-British-heritage families), and parental perception of school readiness.

To date we have collected data from 54 families and preliminary analysis of this dataset indicates the following. Firstly, higher family socio-economic status and higher participation in family activities correlate with more positive parental perceptions of children's school readiness. Secondly, the Chinese-heritage families engaged in fewer HCLE activities than the British-heritage and Pakistani-heritage families. Furthermore, among Chinese-heritage families, there was a correlation between child rearing values and children's screen device usage. Thirdly we also observed differences in home language use patterns between Chinese-heritage and Pakistani-heritage families during their daily activities. Chinese-heritage families use more of their heritage language than English, whereas Pakistani-heritage families use more English than their heritage language. Although data collection is still ongoing, our preliminary analysis clearly shows significant cultural diversity in the HCLE of minoritized families in the UK and underpins the importance of capturing this diversity in our conceptualisation of the home and community learning environment."

Effects of language input and environment

07/19/2024

Parent language quality is associated to neural markers of brain development in preschoolers.

Diana Lopera-Perez; Ashley St. John; Amanda Tarullo

"High-quality parent language —linguistically sophisticated, interactive, and conceptually challenging— crucially supports preschoolers' language development (Rowe & Snow, 2020). This supportive role may result from fostering the maturation of the neural activity that underlies preschoolers' language. More interactive parent language relates to higher frontal brain activation in preschoolers during a listening task (Romeo et al., 2018). However, it remains to be explored whether specific features of parent language quality are independently related to task-independent mature neural activity.

This study examined the relation of parent language quality and baseline EEG gamma power, a marker of neural maturity. We transcribed videos of parent-child dyads completing a puzzle task (N=36 children, M=4.1 years old), from which we extracted parent mean length of utterance (measuring grammatical complexity), number of different words (vocabulary sophistication), and mean turn length in words (interactivity).

We found that preschoolers' EEG gamma power was related to parent mean length of utterance ($F(1, 38) = 4.463$, $p=.041$) and number of different words ($F(1,38)= 8.108$, $p=.007$), controlling for parent total number of words. These results suggest that both parent grammatical complexity and vocabulary sophistication independently link to task-independent mature brain activity.

High-quality parent language may foster more mature brain activity by consistently activating language-related networks in the brain, possibly due to the effort required to process novel words and complex sentences. However, this study's cross-sectional nature cannot establish the directionality of the relation between parent language quality and child brain activity. It is possible that parents use higher-quality language with more neurocognitively mature children. Longitudinal studies are needed to determine the directionality and nature of these associations.

Nevertheless, the current study suggests that specific features of parent language quality have independent associations with preschoolers' brain maturity, which could have implications for creating more targeted parent language interventions."

Effects of language input and environment

07/19/2024

Shared reading and language development trajectories: The context of Chinese parenting beliefs

Hsin-Tzu Tsai; Chien-Ju Chang

Parent-child shared reading is crucial for child development. As children mature, their growing concentration enhances the depth and diversity of shared reading interactions. Initiating shared reading early in a child's life benefits language development and future learning outcomes. Prior research indicates that parenting styles impact family language activities, influencing children's language development. However, there is limited research on the long-term relationship between shared reading and language development within the context of Chinese cultural parenting, especially with representative samples of infants and toddlers. It is challenging to infer the changing relationship between shared reading and language development in the Chinese language environment. This study, therefore, explores the relationship between changes in parent-child shared reading and language development among Taiwanese children aged 6–24 months, and examines whether Chinese parenting beliefs moderate this relationship. Data were collected from the Kids in Taiwan: National Longitudinal Study database, resulting in a final analysis sample of 6,025 children (boys 51.1%, girls 48.9%). Mplus 8.0 software was used for analysis, and data analysis utilized the latent growth model and autoregressive moderation techniques. The findings indicate that at six months of age, shared reading time and its growth rate positively impacted initial language skills and the speed of development. While previous research suggested that stricter parenting beliefs are linked to less shared reading time and slower language development, this study found that such beliefs, whether strict or lenient, do not disrupt the positive relationship between shared reading and language development. This study used a longitudinal research design, and the results highlight that over time, shared reading has a lasting and progressively strengthening effect on language development. These findings contribute to empirical evidence for the formulation of policies and family support programs.

Effects of language input and environment

07/19/2024

Infants' Responses to Action Words used by Mothers for Verb Learning

Tamiko OGURA; Jyunko Hirai

"Purpose: Infants have more difficulty learning verbs than nouns. Mothers support verb learning using infant-directed vocabulary (IDV) and onomatopoeia to refer to actions. West et al. (2022) suggested that the motor actions of an infant predictably frame the caregiver's verb input and provide cues to the meaning of the verb. The present study clarified the temporal timing of infants' responses to mothers' action words, and whether the infants' actions were cues to the meaning of the verb.

Methods: Observational data from a 5-minute toy play session were analyzed from 74 infants 9, 14, and 24 months old. The frequencies of the infants' actions at the timing (before, simultaneously, after, and none) to the mother's onomatopoeia, IDV action words, and verbs were counted and divided with the frequencies of the mothers' three kinds of action words. Transformed arcsine values were used for the statistical analysis. The infants' verbs were assessed using CDIs at the observed time and at the 33-month follow-up.

Results: MANOVAs revealed that the main effects of action words, age, and the timing of the responses were significant. Significant two-way interactions were detected between age × action words and action words × timing. The proportion of the infants' responses to the mothers' action words was highest for onomatopoeia and IDV at 24 months, but no age difference was detected for verbs.

Onomatopoeia accompanied the infants' simultaneous actions, IDV accompanied simultaneously and at the later timing, and the verbs accompanied the infants' actions at the preceding timing. Onomatopoeia and actions share representational meanings and so they occur simultaneously. The infants' responses after the mothers' IDV at 24 months were negatively correlated with infant verb acquisition at 33 months. The present results did not show that the infants' motor actions offered powerful cues to the meaning of the verbs."

Effects of language input and environment

07/19/2024

Preferences for L1-accented speakers in Czech-learning infants: behavioral and neural indices

Lucie Jarůšková; Kateřina Chládková

"Perceptual biases favoring L1- ("native") over L2-speakers are present from early on and affect social behavior and cultural learning. Infants more likely take a toy or food from an adult who speaks their native rather than a foreign language (1, 2). We have replicated the preference for L1-accented friends in preschool Czech children

(3). Some studies indicate that multilingual exposure may attenuate these biases (4), while others find no such effects (5). The present study asks whether the bias towards L2-accented speakers is present in Czech-learning infants, and whether it is modulated by bilingual exposure. We have designed a behavioral toy-taking experiment and a neural speech tracking paradigm.

The predictions are as follows: 1) the Czech-learning infants will show preferences for toy offered by L1-accented speaker rather than L2-accented speaker in Czech (we predict the effect of accent, with the language being identical in both conditions); 2) the infants neural tracking of speech will be more accurate for the L1-accent than for the L2-accent (measured as coherence in the theta and delta band, tracking of the syllabic and word rate, and/or alpha power indicating attention, 6), 3) the effects will be smaller in bilingual than in monolingual infants. Data collection is currently underway, aiming at samples of 20 monolingual and 20 bilingual 10- to 12-month olds.

The present study is unique in that it will provide behavioral and neural measures from the same individual infants. The results will be discussed at the conference and related to findings in the literature to date.

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07/19/2024

Phonological Awareness as a precursor to synthetic phonics for children in special education

Helen Sringer

"Background

In England, all children over the age of five years are expected to engage in and benefit from learning to read by the method of synthetic phonics. Phonological awareness (PA) is recognised as a crucial foundation to literacy and vocabulary learning. Not all children have syllable level PA skills on entry to school. Children with speech, language and communication needs and/or special educational needs are at particular risk. The Newcastle Intervention for Phonological Awareness (NIPA) was implemented in three schools for children with special educational needs as a pilot study to evaluate its usefulness in preparing children for phonics learning.

Methods

Participants who were identified as potential candidates for synthetics phonics learning were selected by specialist literacy teachers. Assessments of PA, receptive vocabulary and attention control were made pre- and post intervention. No control measures were taken. The NIPA was delivered by the specialist teachers in small teaching groups for 12 weeks. Teaching started at the child's zone of actual development/zone of proximal development based on performance on the Newcastle Assessment of Phonological Awareness (NAPA).

Results

All children benefited from the NIPA sessions. For some the benefit was increased intelligibility of spoken language and increased participation in class. Improvements in PA and receptive vocabulary were observed in the majority of children, although only observed in raw sores.

Conclusions

Results were sufficiently positive to indicate the benefit of a larger study investigating the impact of the NIPA and the small group teaching. The small sample, limited range of assessments and lack of control measure make it difficult to establish causation here. Increased intelligibility, attention and participation were unexpected and should be measured in future studies. The wider impact of the NIPA was considered by the specialist literacy teachers to be sufficiently beneficial to implement it more widely in their schools."

Language and literacy, dyslexia and language

07/19/2024

The use of gesture to improve language skills among children with reading difficulties

Sara Feijoo; Mariona Anglada

Previous studies show that co-speech gestures facilitate children's processing of discourse and boost linguistic skills. The present study examines whether hand gestures can also improve learners' morphological awareness. Morphological awareness is the conscious ability to perceive, analyze, and manipulate the morphemic structure of words, and it is positively correlated with reading skills. The main objective of the present study is to explore whether the use of hand gestures iconically signaling the morphemic structure of words increases morphological awareness among learners with reading difficulties. To this end, 12 English L1 learners aged 13-15 participated in this study. They were initially tested on their reading skills by using GORT-5 and had varying levels of reading ability. The study consisted of a short intervention of 3 training sessions during which participants were presented with morphologically complex words. For each word, morphemes received a pitch accent and a hand gesture by the experimenter pointed at the boundary between the stem and the morpheme. Learners' morphological awareness was assessed before and after the training. Preliminary results confirm a strong correlation between reading ability and morphological awareness scores (r = .774, p = .009). Significant differences were also found between pre- and post-test in terms of learning gains after the treatment (Z = 2,023, p = .043). A strong negative correlation was also found between initial morphological awareness scores and learning gains (r = -.896, p < .001) indicating that the lower the initial morphological awareness, the more likely learners are to improve with treatment. These results show that the highlighting of the morphemic structure of words with gesture can be an efficient strategy to promote learners' development of morphological awareness. The evidence of these findings provides new teaching techniques that can help to boost an important skill which is correlated with reading performance.

Language and literacy, dyslexia and language

07/19/2024

Assessing academic language development from elementary to higher education

Rocío Cuberos Vicente; Elisa Rosado Villegas; Melina Aparici Aznar; Verónica Martínez López; Mar Formiga Ribas

"Mastering the grammatical, lexical, and discourse skills required in academic writing is a challenge at all ages. Difficulties in producing texts in academic contexts can lead to school, social and/or professional integration problems. We need to develop reliable assessment tools to properly identify and evaluate the potential difficulties encountered by children, adolescents, and adults in the development of academic language skills.

The objectives of this study are fourfold: (1) to trace age/school-related development of text-based features that are diagnostic of written language quality; (2) to examine potential variations in the external evaluation of text quality across ages/school levels; (3) to determine whether the relation between the text features and the perceived quality of texts evolves with age; and 4) to identify which text features better explain external evaluations.

We examined 212 expository-argumentative texts written by 65 primary (M= 11.6), 78 secondary (M= 15.8) and 69 university students (M= 21). In an independent analysis, several morphosyntactic, lexical and discourse features of the texts were coded. Then, three teachers from each school level evaluated them using a specially-designed analytical rubric.

Results revealed a developmental increase in most text features, only the proportion of discourse markers remained stable. External evaluation of texts was more heterogeneous for primary and secondary than for university students, but scores still improved with educational level. The perceived quality of texts was related only to certain features at each age group: while productivity was a prerequisite for good ratings in the youngest groups, against expectations, use of discourse markers and perceived quality correlated negatively at university level.

These findings might inform the design of assessment tools which may in turn contribute to identify students' weaknesses in academic language development. We discuss their implications with regards to the role of specific text-based features in academic writing assessment across educational levels."

Language and literacy, dyslexia and language

07/19/2024

The Impact of Self-Efficacy on Shared Reading Practices in Spanish-English Bilingual Families

Juliana Ronderos; Kelsey Davison; Jennifer Zuk

"Parental self-efficacy perceptions are an important factor linked to parent-child shared reading practices (time and interactive techniques). Furthermore, there is evidence of reduced shared reading practices in families where parents struggle with reading. Yet, the relationships between self-efficacy, shared reading practices, and parental reading difficulties are poorly understood, especially among bilingual families. The present study examined self-efficacy as a potentially modifiable distal factor contributing to proximal shared reading practices at home for bilingual Spanish-English families, as well as the potential effects of fixed parental traits (i.e., current reading difficulties) on these relationships. We recruited 304 families of Spanish-English preschoolers in the US, who completed a custom survey addressing the following research questions: 1) Do self-efficacy perceptions (SE) contribute to shared reading time (SR-Time) and techniques (SR-Techniques) of Spanish-English bilingual families? and 2) Do parents' current difficulties with reading (RD) mediate these relationships?

Preliminary analyses using structural equation modeling (SEM) reveal a direct relationship between self-efficacy and shared reading practices of bilingual families, significant with respect to time (SE→ SR-Time: $c=0.175$, $p=.004$) but not to techniques (SE→ SR-Techniques: $c=0.117$, $p=.060$) families use for shared reading. The relationship between self-efficacy (SE) and both shared reading time (SR-Time) and techniques (SR-Techniques) latent factors was found to be mediated by parent's current reading difficulties (RD), RMSEA=0.077, CFI =.883, SRMR = .068. Although no significant direct effects were found between self-efficacy and shared reading techniques, statistically significant indirect effects were found for self-efficacy through current reading difficulties to both shared reading time (SE→RD→ SR-Time: $ab=0.079$, $p=.006$) and techniques (SE→RD→ SR-Techniques: $ab=0.057$, $p=.035$).

Initial findings from this study reveal novel associations between self-efficacy and shared reading practices in Spanish-English bilingual families, and highlight the key role of parental fixed factors, especially current reading difficulties, on the time and techniques implemented during these interactions."

Language and literacy, dyslexia and language

07/19/2024

Selective learning in preschool children: The impact of speaker reliability on word learning

Lillian Peters; Shalini Banerjee; Ishanti Gangopadhyay

"Literature on selective learning shows that despite children's preference to learn from reliable (vs. unreliable) speakers in word-learning situations, children learn novel words from both speakers (Gangopadhyay & Kaushanskaya, 2022; Mangardich & Sabbagh, 2018; Sabbagh & Shafman, 2009). Nonetheless, it is possible that a speaker's reliability has variable effects on word-learning over time. The present study examined the impact of speaker reliability on word-learning in 4-5-year-old preschool children at different points.

English-speaking monolingual children (N=12, MeanAge=4.91 years) were tested under two conditions: reliable and unreliable. Children were taught labels for objects from a reliable speaker and different labels for the same objects from an unreliable speaker. Retention testing occurred 1) immediately after teaching, 2) 5 minutes later, and 3) 24 hours later. Children were asked to select between two novel objects when hearing a novel word.

Preliminary results indicate similar performance in the reliable (M=.60, SE=.06) and unreliable (M=.64, SE=.06) conditions at immediate testing (p>.05), confirming prior findings. Children also performed similarly between the reliable (M=.60, SE=.07) and unreliable (M=.54, SE=.07) conditions after a 5-minute delay (p>.05). However, after 24 hours, children retained marginally more novel words (p=.07) from the unreliable speaker (M=.70, SE=.07) than the reliable speaker (M=.46, SE=.08).

Initial results suggest that speaker reliability may exert a stronger influence on delayed testing rather than short-term testing. Interestingly, one day after testing, children retained novel words more accurately from the unreliable speaker versus the reliable speaker. It is possible that a speaker reliability cue offers different encoding experiences of novel words taught by reliable and unreliable speakers, resulting in different word retrieval accuracy at a later time. Future analyses will include children with different linguistic experiences and abilities (e.g., bilingual children and children with autism spectrum disorder) to examine broader effects of speaker reliability on novel word retention."

Language in other neurodevelopmental conditions

07/19/2024

Long-term effects of auditory deprivation on language acquisition in children with cochlear implants

Lena Heine; Anne Erler; Christina Wegewitz; Niki Vavatzanidis; Anja Hahne

"Children with severe hearing loss or deafness now regularly receive cochlear implants (CIs) to restore their hearing. However, CIs have limitations, including reduced frequency resolution, and children with CIs experience auditory deprivation at critical stages of language development. This study investigates the impact of CI use on language processing, focusing on intonational phrases (IPhs) and syntactic analysis.

We posed two primary research questions:

(1) Do CI children process intonational phrases of complex sentences similar to TH peers? The ERP effect closure positive shift (CPS) is used to test this.

(2) Is the syntactic analysis in CI children guided by prosodic information? The ERP effects N400 and P600 are used to test this.

Using EEG, we compared children with bilateral CIs (median implantation age 20 months; median hearing age at testing 8 years) to typically hearing (TH) peers matched for hearing age. The children listened to sentences with either two or three intonational phrases and performed a probe verification task. Behavioral data were collected through a sentence reproduction task.

Our findings revealed notable differences in prosodic processing between CI and TH children. CI children demonstrated clear deficits in prosodic structuring, as evidenced by the delayed or even missing CPS effects. Behavioral data corroborated these findings, indicating lower comprehension of complex sentences in CI children.

Interestingly, CI children demonstrate prosody-guided syntactic analysis at the sentence's beginning, similar to their TH peers. Both groups exhibit N400/P600 patterns, similar to adults, although somewhat delayed in the CI group. This suggests that CI children also rely on prosodic information for syntactic structuring.

Taken together, all prosodic effects were much weaker and observed later than in TH peers, demonstrating that the processing of long and complex sentences is a major challenge for hearing-impaired children."

Language in other neurodevelopmental conditions

07/19/2024

Late phonological development in children with Williams Syndrome: protraction and acceleration

Verónica Martínez; Vanesa Pérez; Manuela Miranda; María Antón; Patricio Vergara

Introduction: Williams syndrome (WS) is a genetic neurodevelopmental disorder characterized by a behavioral phenotype of intellectual disability. Language has been considered an area of specific strength compared to non-verbal intelligence. Research on phonological development is scarce but the initial studies focusing on grammar in adolescents argued that WS was a case of genetic preservation language. However, late onset of language and protracted phonological development have been observed in children with WS. The aim of this study was to determine the rate of late phonological development in a group of children with WS based on error indexes in spontaneous speech. Method: The participants were seven Spanish-speaking children with WS (3;7-8;2) and six normative groups of 40 typically developing (TD) children (3;0-5;6). Speech samples of spontaneous conversations were recorded and analyzed with the tools of the CHILDES Project and the Phon Program. Phonological error indexes were obtained dividing absolute frequency of errors by the total number of words produced (tokens). Results: Children with WS showed a mean reduction of more than 25% in frequency of phonological errors within a six-month interval. In relative terms, the percentage of segmental substitutions increased. Initially, children with WS presented indexes of phonological error at the level of the 3;0 TD group; and, after six months, they were at the level of the 4;6 TD group. Discussion: Children with SW significantly reduced the rate of errors in a six-month interval, showing an accelerated phonological development as previous studies had suggested. Such atypical acceleration might be related to lexical growth in the context of a relative preservation of phonological memory. Furthermore, changes in the relative frequency errors also revealed atypical and non-linear trajectories of late phonological development in children with WS. These findings suggest the need for intervention approaches based on the phonological characteristics of children with WS.

Language in other neurodevelopmental conditions

07/19/2024

Testing effectiveness of a parent support program about augmentative and alternative communication

Sandrine LEROY; Christelle Maillart

"Background : Communication partners play an essential role in setting up augmentative and alternative communication (AAC) system in children with complex communication needs. Therefore, training and support for communication partners is now part of the implementation of an AAC system (Kent-Walsh et al., 2015 ; Leonet et al., 2022). However, data on how to support them effectively is lacking. In this study, a parent support program was designed to help parents of a child with autism spectrum disorder in the implementation and daily use of an AAC tool. This program aims to make parents more comfortable (increase in modeling quality) and competent in their role as communication partners (increase in feeling of parental competence).

Method : Six individuals sessions were offered to 2 parents. An observation grid (used before and after the parent support program) was created to evaluate quantity and quality of modeled sentences during 10-minutes videos of parent/child interaction. (1) Adaptation to the zone of proximal development, (2) use of strategies to support language development, (3) multimodality and (4) use of different functions of communication were analyzed. These aspects were worked during the parent sessions using 4 major learning functions (Haring Biel et al., 2020): information sharing, modeling, guided practice and feedback. Furthermore, semi-structured interviews were proposed at the end of the study in order to see if parent support sessions had an influence on the feeling of parental competence.

Results : Obtained results are encouraging and underline the importance of parent support program to promote daily use of an AAC system. This support strengthen not only quality of modeling but also the feeling of parental competence. In addition, this study provides perspectives on the creation of future parent support programs. However, it is necessary to consolidate these results by considering the limitations inherent to this study."

Language in other neurodevelopmental conditions

07/19/2024

Lexical-Semantic Composition of Verb Vocabulary in Autism and Typical Development

Kaya LeGrand; Letitia Naigles

"Childhood verb diversity predicts adult language performance in autism spectrum disorder (ASD; LeGrand et al., 2021), but autistic children's verb vocabulary has been little explored. Verbs can be categorized based on components of their meaning, like manner (e.g., wipe) and result (e.g., clean). Studies of spontaneous speech report that typically developing (TD) children exhibit a result bias, while children with language impairment do not (Penner et al., 2003). Here, we examine whether this pattern holds in ASD. Further, older autistic children produce less internal state language than TD peers (Baixauli et al., 2016), but stative verbs (e.g., like) have not been analyzed in younger autistic children.

67 children (NASD = 32; NTD = 35) participated in six parent-child play sessions (V1-6), each four months apart. ASD and TD groups were matched on expressive language at V1 but differed in age (ASD V1 Mage=32.85 months; TD V1 Mage=20.26 months). Verbs produced during play sessions were coded as manner, result, manner+result (e.g., climb), or stative. We ran linear mixed effects models with group and visit predicting proportion of verb types in each category. The best models did not include a group-by-visit interaction.

The proportion of result verbs significantly decreased across visits, while the proportions of manner+result and stative verbs increased. Proportion of manner verbs trended toward increasing. The TD group produced a higher proportion of manner+result and stative verbs than the ASD group.

Autistic and TD children produced a higher proportion of result verbs early on, consistent with past analyses of TD children, but this tendency decreased over time. Autistic children in this sample did not differ from TD children in terms of change over time in the lexical-semantic composition of their verb vocabularies. However, autistic children may have more overall difficulty with stative verbs and manner+result verbs than their TD peers."

Language in other neurodevelopmental conditions

07/19/2024

Language and Socio-Affective development in children with Autism, Language and Communication Disorde

Maria Elena Grau Husáriková; Mònica Sanz-Torrent

Introduction: Language development in children is a multifaceted process that intertwines with other neural networks, such as Social Cognition (SC) and Emotional Competence (EC), essential for children to well develop in society. While Autism Spectrum Disorder (ASD), Developmental Language Disorder (DLD), and Social Communication Disorder (SCD) are different disorders, they share commonalities in their impact on language, social, and emotional functions. This systematic review aims to explore the interplay between language and socio-affective components in children aged 4 to 12 years with ASD, DLD, SCD, and Typical Development (TD), shedding light on the distinctive profiles of each disorder. Methods: 1593 articles were systematically reviewed according to the PRISMA guide (Page et al., 2021). Through rigorous inclusion and exclusion criteria, 38 articles were selected for analysis. The selection and qualitative assessment of the included studies was carried out between two independent researchers. Results: Social cognition exhibited a robust correlation with morphosyntax and narrative skills, particularly in children with ASD and DLD, as compared to those with SCD. Lexicon, while displaying a significant relationship, was less affected in children with ASD and SCD. Significant pragmatic low performance was observed in ASD, DLD and SCD children, especially for the last one, and showed a strong relation with SC. Finally, there was a lack of studies that compare prosody and SC, in general, a significant relation is found for ASD children but not for DLD. Conclusion: This systematic review unveils different interactions between variables and different linguistic profiles for each studied disorder. These findings hold important implications for future lines of research focusing on specific language and socio-affective component interactions. Additionally, these insights have practical applications for clinical and educational approaches, to prevent and intervene with this disorders and developmental difficulties.

Language in other neurodevelopmental conditions

07/19/2024

Supporting language development and AAC use in nonspeaking autistic children

Allison Bean

The approximately 30% of nonspeaking autistic people (e.g., Baio et al., 2018; Rose et al., 2016) are often prescribed augmentative and alternative communication (AAC). However, we are still learning how to support language development and use in this population. This presentation focuses on findings from a longitudinal study examining language learning in nonspeaking autistic children, who have been classified as early emerging communicators and use AAC as their primary mode of communication. We hypothesized that language development and AAC use in this population would be influenced by (a) how readily the child had access to AAC and (b) how immersive their language-learning environment was. Fourteen children (seven males, seven females) between 8 and 10 years of age (M = 8.98, SD = .87) participated in the study. All the children had an educational diagnosis of autism and were classified as early emerging communicators (i.e., they did not consistently produce 2-word utterances independently or communicate for a variety of communicative functions; Laubscher & Light, 2020; Rowland, 2011). The children were videotaped every other week for 30 minutes during the school day over the course of 18 weeks. Data logging was enabled on the AAC devices. We found that children had access to their AAC device 65% of the time, and that the device was used during approximately seven percent of the school day (Baker et al., 2023). Our preliminary analyses suggest that children in an immersive AAC classroom demonstrated increased device use and vocabulary development compared with children who received treatment as usual. Taken together, these findings highlight the importance of device access and an immersive language learning environment for nonspeaking autistic children in the initial stages of language learning.

Language in other neurodevelopmental conditions

07/19/2024

Parental questions in verbal input to Bulgarian vs. English-speaking children with autism

Mihaela Barokova

"There is a rich body of literature identifying which aspects of verbal parental input are associated with the language ability of children with typical development and of children with autism spectrum disorder (ASD). Grammatical complexity, lexical diversity and question-asking are among the characteristics of parents' speech that are strongly associated with the number of words children produce both concurrently and longitudinally, which makes these targets for interventions. Past research has focused on English-speaking participants with relatively small sample sizes (N = 15 to 25). The present study aims to compare the verbal parental input to Bulgarian-speaking and English-speaking children with ASD. In addition, we examined what aspects of the verbal input are concurrent predictors of children's expressive language ability.

Natural language samples were collected while parents played with their children with ASD. 37 Bulgarian and 37 American parent-child dyads participated. Bulgarian children (7girls; 30 boys) were between the ages of 2;7 and 9;20, while American children (7girls; 30 boys) were between the ages 1;8 and 4;9, however children were matched on language ability, operationalized as the number of different words produced during the language sample. The samples were transcribed and measures of parental input were extracted.

On average, Bulgarian-speaking parents produced 19.9 (SD=6.22) utterances per minute and English-speaking parents produced 16.26 (SD=4.96) utterances per minute. A series of regression analyses revealed that while holding child age constant, speaking Bulgarian was associated with producing significantly fewer questions and significantly more statements and exclamations. A hierarchical linear regression revealed that parents' number of questions produced was a significant concurrent predictor of children's number of different words produced during the interaction. Specific interventions targeting parents' use of questions with their children have already been developed for English-speaking children. These interventions should be adapted to the context of Bulgarian parents of children with ASD."

Language in other neurodevelopmental conditions

07/19/2024

Analyzing Perception of Emotional Prosody and Lexical Tones in School-age Children with Autism.

Puisan Wong; Puisan Wong; Mei-Yiu Chan

"Background Recognition of emotions of others is important for social communication. Children with Autism Spectrum Disorder (ASD) have particular difficulty with social interactions. Inconsistent findings have been reported on whether children with ASD have emotion recognition deficit. specific (Evers et al., 2015; Rump et al., 2009;) and whether the deficit is modality. In tone languages, pitch is used for both emotion expression and lexical differentiation. It is unclear whether children with ASD have difficulties perceiving lexical tones in emotional prosody. This study examined how well school-age children with ASD (1) perceive emotions of others in different modalities and (2) identify lexical tones in emotional prosody.

Method Twenty-three 6- to 7-year-old Cantonese-speaking children who had typical non-verbal IQ and language skills, and were formally diagnosed with ASD and 32 typically-developing (TD) Cantonese speaking children matching the chronological age of the ASD children participated in the study. They identified the six basic emotions (i.e., happiness, sadness, fear, anger, surprise and disgust) in three different (auditory-only, visual-only, and auditory-visual) modalities and the six Cantonese tones in neutral and emotional prosody.

Results Results showed comparable emotion identification ability in ASD and TD children in all three modalities and enhanced lexical tone identification in ASD children.

Conclusion The findings suggested that ASD children whose language and non-verbal cognitive skills are within normal range have no deficits in processing affective prosody in any of the three modalities. They have an advantage in processing local-oriented acoustic information, such as lexical tones, in auditory signals. The findings support the Enhanced Perceptual Functioning Theory of ASD (Mottron & Burack, 2001; Mottron et al., 2006)."

Language in other neurodevelopmental conditions

07/19/2024

Pragmatics of conversation in Williams and Fragile X syndromes: cooperation and turn-taking

Eliseo Diez-Itza; Viejo Aitana; Fernández-Urquiza Maite

"Introduction: Williams syndrome (WS) and Fragile X syndrome (FXS) are genetic neurodevelopmental disorders causing intellectual disability (ID). Their behavioral phenotypes include specific strengths and weaknesses in the linguistic profiles. An area of weakness is found in the pragmatics of social communication, although specific pragmatic abilities in adults with ID remain under-researched. Furthermore, the assessment of pragmatics is based on standardized measures focusing on children, while naturalistic methods are very scarce. The aim of the present study was to assess the pragmatic profiles of WS and FXS within the SYNDROLING Project. Specifically, we analyzed the Gricean maxims of cooperation and the predictability and priority in turn-taking.

Method: Participants were divided in three groups of six individuals: FXS group, WS group and typically developing (TD) group. Naturalistic conversations with a researcher were video-recorded, and subsequently

transcribed using the tools of the CHILDES Project (MacWhinney, 2000). The conversations were coded using the Pragmatic Evaluation Protocol for Corpora (PREP-CORP).

Results: Both groups exhibited violations of all the maxims of cooperation: differences in Quality, Quantity and Manner were not significant. The individuals with FXS showed higher levels of violation of the maxim of Relation, specifically through perseverations, and of responses reflecting lack of comprehension, impulsivity, and echolalia. Predictability of turns was at typical level in WS, but not in FXS. Priority of turns was inadequate in both groups, especially in the case of FXS, reflecting evasive and delayed responses, perseverations, fabulations, and theory of mind problems.

Discussion: Individuals with WS and FXS can engage in extended conversations, although cooperation and turn-taking in conversation are limited, reflecting several pragmatic difficulties. The analysis of multiple aspects of naturalistic conversations is essential to the pragmatic assessment in neurodevelopmental disorders, as it can reveal specific characteristics in the linguistic phenotypes, which should guide language interventions across the lifespan."

Language in other neurodevelopmental conditions

07/19/2024

Latent Profiles of Verb Development in Autism and Typical Development

Kaya LeGrand; Julia Parish-Morris; Letitia Naigles

"Verb production in childhood predicts language outcomes in adulthood for individuals on the autism spectrum (LeGrand et al., 2021). However, few studies have investigated early verb production in ASD, leaving it unclear whether verbs pose a particular challenge for autistic children. Here, we compare longitudinal verb production in ASD and typical development (TD).

67 children (NASD = 32; NTD = 35) participated in six parent-child play sessions (V1-6), each four months apart. ASD and TD groups were matched on expressive language at V1 but differed in age (ASD V1 Mage=32.85 months; TD V1 Mage=20.26 months). Verbs and nouns were extracted from transcripts of each play session, and number of different words (NDW) was calculated. We conducted latent class mixed models to reveal latent classes of verb, noun, and NDW trajectories.

Three profiles of verb development emerged. One group started with a high number of verbs and increased over time (Profile 1); another group started with a low number of verbs and increased over time (Profile 2); a third group started with a low number of verbs but did not increase over time (Profile 3). Profile 3 consisted entirely of autistic children (60% of the ASD group demonstrated this profile), but the remaining autistic participants were split evenly between Profiles 1 and 2. Noun and NDW profiles looked similar to verb profiles, but not every child's verb profile matched their noun and/or NDW profile (i.e., some children had higher noun profiles than verb profiles; some children had higher or lower NDW profiles than verb profiles).

These results suggest that while some autistic children demonstrate persistent challenges in verb vocabulary growth, others perform equivalently to their TD peers. This reflects the overall heterogeneity in language in ASD. Our results also suggest that verb trajectories can be distinct from noun and NDW trajectories."

Language in other neurodevelopmental conditions

07/19/2024

Complex Syntax Acquisition in Spoken English of Preschool Children who are Deaf or Hard of Hearing

Krystal Werfel; Emily Lund; Lisa Fitton

The purpose of this study is to describe complex syntax development in children who are deaf or hard of hearing (DHH) over the preschool years. Recently, complex syntax production was examined in children who are DHH at four years of age (Werfel et al., 2021). At age 4, children who are DHH had lower complex syntax density than their same-age peers with typical hearing. Children who are DHH produced three complex syntax features—coordinated clauses, subordinate clauses, and simple infinitives—less often than their age-matched peers, but not their language-matched peers, with typical hearing. Further, children who are DHH at age 4 had significantly lower percent accuracy than children with typical hearing on simple infinitives, full propositional complement clauses, and subject relative clauses. Therefore, based on this analysis of performance at one point in acquisition, the complex syntax acquisition of children who are DHH appears to be not only delayed but also different from children with typical hearing. In this presentation, we will report on longitudinal complex syntax acquisition for children who use cochlear implants, children who use hearing aids, and children with typical

hearing (n=45 in each group). All primarily use spoken English. Children participated in a 12-minute language sample following the Hadley (1998) protocol. Each child was assessed initially at age 4 and then at 6-month intervals until they turned 6. Preliminary findings from nine children who are DHH indicate that during the preschool years, complex syntax density increased in children who are DHH. The children who are DHH also produced a relatively low rate of errors in complex syntax productions. They exhibited the most growth in using coordinate clauses, simple infinitives, full propositional clauses, and headless relative clauses. All data collection is complete. Analysis is ongoing, and we will report on the full dataset in this presentation.

Language in other neurodevelopmental conditions

07/19/2024

ONLINE ASSESSMENT OF PHONOLOGY IN CHILDREN WITH NOONAN SYNDROME

Verónica Martínez; Tamara Pérez-Sanjurjo; Patricio Vergara; Eliseo Diez-Itza

Introduction: Noonan syndrome (NS) is a genetic neurodevelopmental disorder caused by different genetic mutations in the RAS-MAPK pathway. The behavioral phenotype includes in most cases learning disability. Language studies are scarce indicating phonological, grammatical, and pragmatic impairments in NS individuals with mixed etiologies. The aim of the present study, within the framework of the SYNDROLING Project (online linguistic analyses of genetic syndromes), was to analyze the phonological errors in children with NS and unique etiology (PTPN11), and to compare two elicitation methods (conversation vs articulation test). An additional objective was to assess the relationship between phonological errors and verbal and nonverbal mental age. Method: participants were 12 children with NS (PTPN11 gene) (Mean age = 9;08) and 12 typically developing children matched on chronological age. Speech samples were obtained online from spontaneous conversations with a researcher and from the Test of Spanish Phonology. The samples were recorded and then transcribed and analyzed with the tools of The CHILDES Project and the Phon program. A phonological error index was obtained dividing the number of errors by number of word types. Lexical verbal age was obtained from the PPVT-III, and nonverbal mental age from the Raven's 2 Progressive Matrices Test. Results: the children with NS presented a higher index of phonological errors in spontaneous conversation than their controls with TD, but differences in the articulation Test failed to emerge. A positive correlation between phonological errors in spontaneous conversation and nonverbal mental age was found, but verbal age did not predict the rate of phonological errors. Discussion: In children with NS, phonological errors persisted beyond the later stages of typical development, and high proportions of atypical errors (metathesis, assimilation, and addition) were observed, suggesting disorders of speech processing related to intellectual functioning. Online assessment proved to be a feasible method in language evaluation.

Language in other neurodevelopmental conditions

07/19/2024

'Building and standing': the development of Discourse building mechanisms in academic writing

Iban Mañas; Elisa Rosado Villegas; Melina Aparici Aznar; Alondra Camus

"The development of the skills needed in analytical writing (expository-argumentative texts typical of academic contexts) extends to advanced ages/levels of education, and involves appropriate use of specialized language forms and functions. For example, the organization of information in the text is accomplished by means of a series of Discourse building mechanisms (DBMs) at both intra- and inter-sentential levels. Such mechanisms express diverse logical-semantic relations between discourse units and contribute to text cohesion guiding readers' comprehension. DBMs do not only indicate text quality, but are also reliable predictors of academic writing development.

We analyzed the texts produced in L1 Spanish by 212 participants: 65 primary schoolers (M age= 11.6), 59 secondary schoolers (M = 15.8), and 69 university students (M = 21). We aimed at defining patterns of development in the use of DBMs, as well as to identify potential difficulties in their use. To this end, we examined a) the participants' repertoire of DBMs (coordinating & subordinating conjunctions; discourse markers), and b) the discourse functions (propositional, structural, modal) they performed, across ages.

Results revealed a developmental pattern in the production of DBMs: while conjunctions were more frequent in primary and secondary school, university students showed a more balanced use of both conjunctions and inter-sentential markers. The contribution of age was also relevant for explaining the distribution of DBMs' functions: 1) university students were more willing to use modal markers to express their viewpoint than primary and secondary schoolers; 2) the use of structural markers was significantly lower than propositional or modal markers for all age groups; 3) the dominance of propositional DBMs was also a cross-cutting feature.

These results allow us to outline a pattern of development of the discourse skills needed in academic contexts, which might help in identifying and solving possible difficulties at different educational levels."

Typical first language acq.: narrative, pragmatics, discourse

07/19/2024

Do Conditionals Appear Late? Counter-Evidence from Mandarin

Pepper Yan

"Conditional connection ((If)P then Q) shares the structure with temporal/causal connection (P then Q), but is hypothetical and semantically more complex. English-speaking children begin producing conditionals around 3;06 (Reilly, 1982) due to late development of necessary cognitive resources (Slobin, 1973), which predicts the delay of conditionals in children acquiring other languages. However, Katis (1997) finds Greek-speaking children using conditional connectives as early as 2;00 attributed to their rich inflectional morphology.

The present corpus study investigates whether children acquiring morphological-deficient languages like Mandarin show delays on conditionals. We predict that (a) Mandarin-speaking children would show a delay on conditional connections due to underdeveloped cognitive resources and deficient morphology; (b) Temporal/causal connections would appear earlier and more frequently in children's speech, and conditional connections appear and stabilize later.

We extracted utterances containing a highly-frequency connective jiu (roughly "then") used in both temporal/causal and conditional connections from naturalistic speech of in four Mandarin CHILDES corpora (N=6, 1;7-4;5). Contextual information was adopted to disambiguate the utterances. The result shows that (i) Contrary to the prediction, all of the six children start to use jiu in hypothetical conditionals at the very beginning of age two; (ii) Focusing on a single child, before the beginning of age three, children use jiu more frequently in temporal and causal connections; after three, children use jiu in hypothetical conditionals significantly more than temporal/causal connections ($\chi 2$(1, N=1) =17.54, p < 0.001).

The age when children begin using conditional connectives does vary by language, but it is not predicted by morphological-richness because Mandarin and Greek children pattern alike. Identifying and explaining the actual pattern of crosslinguistic variation is therefore an important research project for the acquisition field, with the potential to uncover new properties of the syntax/semantics of conditionals."

Typical first language acq.: narrative, pragmatics, discourse

07/19/2024

Shhh! The Effect of Whispering on Children's Information Sharing, Selective trust, and Memory

Christina Barnes; Douglas Behrend

"Whispering is a unique speech register in which vocal chord vibrations are suppressed. Little work has focused on children's understanding of and responses to whispering's multiple communicative functions. We conducted three studies aimed investigating the impact of whispering on children's judgments of information sharing, selective trust, and memory.

Information Sharing: Whispering is used to keep information privileged. Ninety-six children (M = 6.3 years) watched animations in which two characters, one using voiced speech and one whispering, described a simple event. A third character then entered the video and children were asked which of the characters would tell the third what happened. Children 6 and older selected the whisperer less often than chance, indicating they expect whisperers are less likely to share information than those speaking in normal register.

Selective Trust: Whispering may be used to emphasize the veracity of an utterance. 75 children (M = 5.2 years) participated in a classic selective trust task. After training, whispered and voiced speakers each provided a label for an unfamiliar object. Children trusted the previously accurate speaker regardless of register for both information and social interactions.

Memory: Whispering increases auditory vigilance and may increase memory for information. Ninety-five children (M = 5.9 years) watched animations that began in a whispered or voiced register. Animations contained a target sentence ("My favorite flowers are the purple ones"") that was consistent or contrasted with the original register. Children's memory for this target was assessed. Results showed that register did not have a significant impact on participants' recall of target information across age groups.

These studies demonstrate that whereas most young children know what a whisper is and can whisper on demand, it may not be until children are around 6 years of age that they begin to reliably use whispering to infer a speaker's intent."

Typical first language acq.: narrative, pragmatics, discourse

07/19/2024

Exploring Internal State Term Usage in Luganda-Speaking Children's Narratives

Celestino Oriikiriza; Sigal Uziel

Understanding children's use of internal state terms (ISTs) in narratives offers insights into their cognitive and social development, including Theory of Mind (ToM) skills. Research shows that integrating ISTs into children's vocabulary is gradual; younger children emphasize emotions and intentions, while older children develop more diverse ISTs. This study investigates IST usage in narratives produced by 24 Luganda-speaking children (ages 7 to 12) using the four picture sets (Baby Birds, Baby Goats, Cat, and Dog) of the Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al., 2019). Each child narrated two stories based on different picture sequences. The narratives were audio-recorded, transcribed, and coded for various categories of IST, including perceptual, physiological, emotional, cognitive, and linguistic states. Findings indicate that overall Luganda-speaking children use a limited set of ISTs, mainly "want" and "see", "happy" and "scared", and quite randomly, "hesitate" or "realize". As they grow older, they incorporate a wider range of ISTs with increased frequency. The use of a particular picture set was not found to influence the number of ISTs used. The limited use of ISTs may be attributed to cultural aspects like the African storytelling tradition noted, for example, in relation with the Zulu traditional storytelling folklore (Ndlovu & Klop, 2023), whereby ISTs are often performed by the narrator rather than stated verbally, thus emphasizing the performative aspects of storytelling in certain cultural contexts. This research underscores the role of age and cultural background in children's ability to convey internal states. Individual differences among children and the significance of considering cultural and contextual factors in language development studies are highlighted.

Typical first language acquisition: lexicon

07/19/2024

The development of phonological awareness and vocabulary in preschool-aged Greek speaking children

Eleftheria Geronikou

"The current study seeks to investigate the development of phonological awareness abilities and vocabulary in typically developing Greek-speaking preschool-aged children for which little information is available. The role of vocabulary is thought to be crucial in the development of phonological awareness. It has been suggested that early lexical representations are holistic in nature and gradually become more accurate as a result of vocabulary growth.

Two groups of typically developing children aged 3;0-3;5 and 4;6-5;0 years respectively were assessed longitudinally at three assessment points six months apart. Phonological awareness was measured using a silent blending and a segmentation task. In the blending task, children combined individual phonemes or syllables to form words and matched them with pictures. The segmentation task required children to break orally presented words into constituent phonemes or syllables, with responses graded based on analysis depth and accuracy. Productive vocabulary was assessed using the Greek adaptation of the Renfrew word-finding test.

Repeated Measures ANOVA was performed to compare performance accuracy of Group 1 and Group 2 over time. Group 1 showed significant time effects for blending ($F(2, 13)=30.32$, $p<.001$), segmentation ($F(2, 14)=12.86$, $p=.001$), and vocabulary ($F(2, 14)=43.35$, $p<.001$). Group 2 demonstrated time effects for blending ($F(2, 16)=8.33$, $p=.033$) and vocabulary ($F(2, 17)=40.47$, $p<.001$) but not for segmentation ($F(2, 18)=.832$, $p=.451$).

Moreover, the relationships between phonological awareness tasks and vocabulary production were explored through Pearson correlations. Significant relationships were observed between segmentation and vocabulary production within and across time, more frequently in Group 2.

The findings support the notion that as a result of vocabulary growth the phonological representations become increasingly segmented, facilitating the differentiation of lexical items. This study contributes valuable insights into the interplay between vocabulary and phonological awareness in typically developing Greek-speaking pre-school aged children."

Typical first language acquisition: lexicon

07/19/2024

Cognitive and social aspects in the alternation of noun plural forms in Brazilian Portuguese

Christina Abreu Gomes; Thiago Alvarez Amaral

The behavior of 38 children from low class acquiring Brazilian Portuguese, aged between 5 and 12 years-old, is compared to the behavior of 67 adults with different levels of education using the same experimental tool: an elicitation test of plural production of pseudowords ended in the falling diphthong V[w]. The aim is to contribute to the understanding of this alternation in Brazilian Portuguese and to address the issues related to the variation, processing and representation of complex words in the lexicon as well. When pluralized, V[w]-final nouns include an alternation between the regular morpheme <-s> and the irregular <-is>. Each of these words has an etymological source that defines which morpheme should be applied to the plural form. However, in some cases, a different plural form is used instead of the etymological one. For the adult groups, the results showed that the effect of structural constraints, such as the vowel nucleus of the diphthong and the number of word's syllables (Becker et al, 2017), and the inference of the most productive morpheme didn't hold constant, and both are related to the participant's level of schooling. For the children's data, age was an important predictor of the realization of the plural and none of the structural constraints were statistically significant. Children's behavior resembles that of adults with a low level of education. These results provide evidence that support the assumption that morphological generalizations emerge from the network of word-forms in the lexicon (Bybee, 1995; Ambridge; Lieven, 2011) but the directionality of the inference of the most frequent plural type depends on the sociolinguistic experience of the individuals. Therefore, although speakers use the same cognitive mechanisms (analogy, statistical inference, etc.) to infer linguistic patterns from the lexicon, for sociolinguistic reasons, the directionality of the inferences may not be the same for all speakers.

Typical first language acquisition: morphology, syntax

07/19/2024

Children make a moral judgment using verb transitivity as a clue

Ayaka Ikeda; Hinako Goto

"Previous studies revealed that children tended to choose transitive expressions rather than intransitive ones when describing intentional events (Kanero et al., 2016; Okuno et al., 2020). Children also make intent-based moral judgments (e.g., Margoni & Surian, 2017; Margoni & Surian, 2020). However, it is unclear whether children use verb transitivity, which is a signal of intentionality, for moral judgment. This study examined whether verb transitivity affects children's judgment of good-and-evil and degree of punishment.

Children aged 3–10 years (N = 57) participated in the study. Six experimental trials were conducted for each transitive and intransitive condition. In the trials, children were presented a short movie, where two women talked about a certain child who is in bad situations. In a transitive condition, the situation was explained using transitive verbs (e.g., "Taro broke his toy"). On the other hand, the situation was explained using intransitive verbs in intransitive condition (e.g., "Yui's toy broke"). After each video, the children were asked to indicate whether they perceived the individuals as good or bad on a 5-point Lickert scale. They were also asked how much they think the individuals would be in trouble in the future considering the four choices: none, a little, moderate, a lot.

Results showed that children evaluated the individuals in the transitive condition worse than those in the intransitive condition regardless of age of month. However, there was a significant interaction between condition and age in month on degree of punishment, suggesting that children did not distinguish between transitive and intransitive expressions in terms of the degree of punishment at an early age, but they do as they grow. Together, children use verb transitivity for moral judgment; however, the judgment of the degree of punishment depending on verb transitivity develops later than good-and-evil judgment."

Typical first language acquisition: morphology, syntax

07/19/2024

Zi-ji or ZI-JI: The use of prosody in anaphora resolution by Mandarin-speaking adults and children

Kexin Du; Li Zheng; Aoju Chen; Sergey Avrutin

"The Mandarin reflexive 'zi (falling tone)-ji (low tone)' (oneself) can refer to a long-distance antecedent that is not bound in the local clause. In sentences like [Miffy dreamed that [Boris painted zi-ji 's face]], 'zi-ji' can establish two types of anaphor-antecedent dependencies: a local dependency where 'zi-ji' refers to Boris; a non-local dependency where 'zi-ji' refers to Miffy.

Prosody is used to disambiguate pronominal reference in production in languages like English (e.g. The camel hit the lion and then he/HE hit the elephant). This study investigates whether prosody is used to disambiguate the two usages of 'zi-ji' in Mandarin and if so, how Mandarin-speaking children learn this function of prosody. Previous comprehension studies of 'zi-ji' show that extra processing effort is needed to process the non-local dependency. Assuming a comprehension-production symmetry, we hypothesize that 'zi-ji' will be produced with more articulatory effort, hence more prosodic prominence, in the non-local dependency than in the local dependency.

Using a picture-matching game, we elicited sentences with 'zi-ji' like the example above from Mandarin-speaking adults and 5-year-olds (20 each) in an interactional but controlled setting. We report the results on the prosodic properties of 'zi-ji' in the local and no-local dependency conditions from ten adults and seven children.

Linear mixed-effect modelling on duration of 'zi-ji' and pitch span of the morpheme 'zi', a proxy for the pitch span of 'zi-ji', has shown that Mandarin-speaking adults produced 'zi-ji' with a significantly longer duration in the non-local dependency condition than in the local-dependency condition and made no use of pitch span to distinguish these two. Unlike adults, the 5-year-olds used neither duration nor pitch span for this purpose. However, they exhibited a tendency of using a wider pitch span on the morpheme 'zi', in the non-local dependency. Data collection from 7-to-11-year-olds is currently underway."

Typical first language acquisition: morphology, syntax

07/19/2024

Case morphology acquisition in monolingual and heritage-Lithuanian children

Ineta Dabašinskienė; Eglė Krivickaitė-Leišienė; Skirmantė Gribkauskienė; Laura Kamandulytė-Merfeldienė; Viktorija Kavaliauskaitė-Vilkinienė

"Acquiring case morphology in heritage languages is a multifaceted process influenced by various factors, including linguistic environment, input, and language contact (Polinsky 2018). This study delves into child Heritage Language (HL) acquisition patterns, focusing on case morphology, which is central to Lithuanian grammar.

Our participants consisted of two groups of children: (1) HL-Lithuanian speakers residing in Ireland, represented by Lithuanian-English speakers (n=40, aged [4;0-7;11], mean=[5;8]) and aged [8;0-12;11], mean=[9;6]; (2) Lithuanian-speaking monolingual children (n=30, aged [4;0-6;11], mean=[5;2]). All participants completed the same elicited production picture description task, examining grammatical cases (particularly, the accusative case) and semantic cases assigned by prepositions.

The findings revealed that the HL-Lithuanian group deviated in case morphology compared to the monolingual children across different age groups. While monolingual children as young as 4-5 years reached ceiling performance in most case forms (except for number agreement), HL children displayed a high degree of heterogeneity in their linguistic outputs. Quite distinct qualitative patterns emerged in HL children's responses compared to monolingual peers, even the youngest ones, and older bilinguals. These patterns displayed simplification and restructuring (cf. Polinsky, Scontras 2019), overgeneralization of case markings, especially nominative, but also accusative, and introduction of non-native patterns (the case system of Lithuanian is fairly different from English).

The analysis shows that child HL speakers follow a unique acquisition pattern compared to their monolingual counterparts. We discuss the theoretical implications of these findings, emphasizing the role of language contact and typological distance in case acquisition, the importance of sufficient and high-quality input, and the potential influence of transfer effects from the dominant language (Meir, Janssen 2021). We also highlight the variability in heritage language proficiency within heritage language communities, influenced by such factors as language attitudes and community support for language maintenance."

Typical first language acquisition: morphology, syntax

07/19/2024

Case-Marking and Word Order in Czech and German Four-Year-Olds

Anna Chromá; Claudia Friedrich; Jolana Treichelová; Filip Smolík

"Relative delay of comprehension of non-canonical OVS over canonical SVO sentences has been shown in children across many languages, including Czech and German. However, Czech children appear to comprehend OVS word order earlier than their German peers. In a cross-linguistic study, we directly compare Czech and German children's comprehension of closely matched sentences with varying word orders.

We use identical pictorial stimuli, parallel Czech and German picture descriptions, and an identical experimental procedure. Based on eight items combining one unambiguous noun (der Igel/ježek 'hedgehog') and one ambiguous noun (die Maus/myš 'mouse'), 32 trials were created, with each item appearing in four conditions (SVO-initially-ambiguous, SVO-initially-unambiguous, OVS-initially-ambiguous, OVS-initially-unambiguous). Children are presented with all trials, each time seeing two pictures with reversed role assignment and listening to the sentence descriptions, while having their gaze tracked. After each trial, children are asked to point at the correct picture.

Nineteen German children aged 3;06 – 4;10 years have been tested so far. Another eleven German and thirty Czech participants are to be tested yet.

For initially-ambiguous sentences, German children's gaze or pointing did not differ across the word-order conditions. For initially-unambiguous sentences, children gazed and pointed significantly less to the SVO picture in the OVS condition: 67% vs 82% of SVO-pointing responses; and 51% vs 64% of SVO-looking time in the sentence-final noun time-window.

With an initial unambiguous morphological cue, German four-year-olds clearly distinguish SVO and OVS word order. However, while they interpret the SVO sentences mostly correctly, in the OVS condition, they appear confused, which confirms the existing research. The implicit (gaze direction) and the explicit (pointing) measure matched. At the conference, comparison to the not-yet-available Czech data will be presented."

Typical first language acquisition: morphology, syntax