THE 49TH BOSTON UNIVERSITY CONFERENCE ON LANGUAGE DEVELOPMENT

NOVEMBER 7–10, 2024

Contents

1 Thursday, November 7, 2024

1.1 Student Workshop

Understanding industry job ads: How to match your (existing!) skills to companies' requirements

Cindy Blanco

Non-academic job ads are a genre of their own—and this workshop will introduce you to the vocabulary, metrics, and skills you'll need to understand them and to craft a brand-new resume. We'll analyze real job ads, brainstorm ways to address each requirement, and discuss common oversights. This workshop is designed for academics at all stages, no matter your field and whether you're committed to industry or just curious.

2 Friday, November 8th, 2024

The relation of home literacy environment to brain specialization for phonological and semantic processing for children 5-8 years old.

Alisha B. Compton, Anna Banaszkiewicz, Jin Wang and James R. Booth

This study investigated the relation between the home literacy environment (HLE) and phonological and semantic functional specialization in 5-6- (N=33) and 7-8-year-old children (N=76). Phonological and semantic processing are critical components of language comprehension. Phonological and semantic specialization have been established for 5-8-year-old children. Prior studies indicate HLE relates to language processing behaviorally and in the brain. Although HLE is related to brain activation during language tasks, whether

HLE supports phonological and semantic specialization remains unknown. This study used fMRI sound and meaning judgment tasks. Results suggest a relation between HLE –measured as frequency of family-to-child reading –and phonological specialization in 5-6-year-olds in left superior temporal gyrus (STG), and semantic specialization in 7-8-year-olds in left STG, left middle temporal gyrus (MTG), and left inferior frontal gyrus (IFG). Additionally, within-task analyses revealed relations between HLE and phonological processing in 5-6-year-olds (in STG) and semantic processing in 7-8-year-olds (in MTG).

What is the Baby "Saying" ? Adults' Interpretation of Infants' Pointing Gestures.
Ran Wei, Ulf Liszkowski, Paul Harris and Meredith Rowe
Across cultural contexts, infants' pointing gestures are foundational to the development of intentional and adaptable communication. Previous research has proposed that early pointing gestures may convey requestive, expressive, informative, and interrogative intents. Nevertheless, it remains unknown how adults interpret infants' intents conveyed through pointing gestures. We adopted the Human Simulation Paradigm to measure adults' interpretations of video clips of infants' pointing gestures through an online survey. Through three studies with adult students in the U.S., American parents, and German parents, we ask whether adults' interpretation of infants' index-finger pointing gestures aligns with the taxonomy in the current literature, and whether these interpretations differ according to cultural backgrounds and experience caring for infants. Results suggest adults reliably interpreted infants' "correct" intents expressed via the prototypical pointing gestures regardless of their experience caring for infants or their cultural background suggesting that the capability to interpret pointing gestures may be a universal aptitude.

Switching the Majority Language: The case of Heritage Greek in North and South America.
Evangelia Daskalaki, Aretousa Giannakou, Christina Haska and Vicky Chondrogianni
This study examined the acquisition of Greek under the influence of Spanish and English. In particular, we focused on vocabulary and grammar and collected data from (i) a group of Greek-Spanish bilingual children who speak Greek as an HL in South America (SA), and (ii) a group of Greek-English bilingual children who speak Greek as an HL in North America (NA). 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 (that included both cognates and non-cognates), and two sentence completion tasks that targeted the form and placement of referential expressions. We found facilitatory effects when Spanish was the ML across all domains except the domain of null subjects and object clitics. This finding supports the conclusion that the typological proximity with the ML may boost heritage children's performance, even under reduced input.

The Changing Roles of the Language and Attention Systems in Statistical Learning Across Development.
Anqi Hu, Katherine Trice, Pradyumna Lanka and Zhenghan Qi
Children learn languages more successfully than adults. However, the mechanisms underlying children's language learning advantage remain under investigated. Statistical learning (SL) is a fundamental building block for language development. Understanding SL mechanisms across development may explain why children learn languages better than adults. This study thus examined the neurodevelopmental changes of SL in the language and attention networks, which undergo significant changes across development. Forty adults and twenty-eight 5-to-12-year-old children completed a Syllable SL task in the scanner, where they listened to a structured syllable sequence containing triplet patterns and a random syllable sequence. Children's language and attention networks showed greater sensitivity to linguistic patterns than adults. The plasticity of the language network emerged earlier in children than adults. Children also showed a greater decouplng between networks than adults during the later stage of learning. Future research should explore if children's enhanced short-term functional plasticity leads to better language outcomes.

Connections between real-time point comprehension and overall gesture and word knowledge in infancy.
Lillianna Righter and Elika Bergelson
Early gestures like pointing have well-established, robust links with early language. We ask whether improvements in point comprehension around age 1 relate to early receptive and productive vocabulary, and

gesture vocabulary, within infants, using a box search task (Behne et al, 2012) and the English Words and Gestures CDI. In a sample of 37 infants, we find robust positive relationships between point comprehension performance and each of three factors: age, productive vocabulary, and gesture use. We replicate prior work on pointing and set groundwork for examining an ordered relationship between the onset of point comprehension and vocabulary growth.

Comprehension and production of which-questions in child heritage speakers of Romanian: The role of DOM and number agreement.

Anamaria Bentea and Theodoros Marinis

This study compares the comprehension and production of Romanian subject and object which-questions in child heritage speakers and monolingually-raised children and aims to understand whether a. morphosyntactic cues like Differential Object Marking/DOM and number agreement guide online interpretation in heritage language/HL and monolingually-raised children and b. whether HL children use these cues in their production. The results of a visual-world eye-tracking task showed similar processing patterns in monolinguals and HL children for subject questions, which overall displayed more looks to Target images than object questions. The data also revealed a higher proportion of looks to Target in object-questions with number mismatch than in questions with number match, but only in the monolingual group. The results of an elicited production task indicate that monolingual children produce significantly more target subject and object which-questions than HL children, but number mismatch does not enhance which-question production in either group.

Receptive language development in children born to mothers with gestational diabetes mellitus.

Jennifer R. Barbosa, Lauren C. Shuffrey, William P. Fifer and Laura Lakusta

Although research has progressed in understanding the components of language, the neurobiology of language is still not well understood. Our study explores children exposed to Gestational Diabetes Mellitus (GDM), aiming to understand the relationship between receptive language components and neural processes. GDM, affecting about 10% of pregnancies in the US, alters the in-utero environment and can lead to neurodevelopmental changes relevant to language development. Previous studies have shown mixed results regarding the impact of GDM on language (Dionne et al., 2008; Krakowiak et al., 2012). To address this, we conducted a study with 32 children, assessing receptive language using the QUILS/QUILS:ES via Zoom. Hierarchical linear regressions, controlling for sex and age, found no significant differences in receptive language between GDM-exposed children and controls. These findings suggest that receptive language may be preserved in GDM-exposed children, warranting further research into the underlying neurobiological pathways.

Language Input in the Amazonian Indigenous Context: A case study from Panãra.

Jessamine Jeter, Naja Ferjan Ramirez and Myriam Lapierre

While existing language acquisition research suggests that child-directed speech (CDS) is an ideal type of input for children, this work largely focuses on children in Western settings where CDS is the cultural norm (e.g. ManyBabies Consortium, 2020). Panãra cultural practices differ greatly from those in Western societies: Panãra society is not child-centered, and qualitative ethnographic reports suggest CDS infrequent (Ewart, 2008). This is the first quantitative study of the Panãra linguistic environment. We collected and analyzed 13 day-long recordings of Panãra infants. Data suggests that Panãra infants spend the bulk of their day with multiple adults, as opposed to being in one-on-one interactions, as is common for Western children. Additionally more than half of Panãra infants' language input comes from other-directed vocalizations (ODV), rather than CDS. Taken together, these results suggest that Panãra children may learn to 'tune in' to ODV to extract the necessary linguistic information.

Heritage speakers' perceptual phonological advantage over non-native listeners is not a universal phenomenon.

Matthew Ayobami Ajibade

Heritage speakers are often recognized for their phonological advantage over adult non-native listeners. To further explore this well-known phenomenon, we conducted a study on the perceptual discrimination of Yoruba place of articulation and voicing contrasts in labial-velar, labial, and velar stops. Participants in-

cluded native Yoruba (NY) speakers, heritage Yoruba (HY) speakers, and naïve listeners (NL). Our findings revealed varying levels of performance across these groups, depending on the specific contrasts. Although all three groups effectively discriminated most contrasts, the results from the labial-velar versus labial contrast and the voicing contrast in labial-velar were particularly noteworthy. In the voicing contrasts, HY speakers demonstrated an advantage over NL. However, in the labial-velar versus labial contrast, the performance of both groups was comparable. These results challenge the belief in a universal phonological advantage for heritage speakers over non-native listeners, suggesting that such advantages may be contrast-dependent and not universally applicable.

Validity of a gamified statistical learning task as a measure of childrens' real-world language learning.

Brynn Siles, Anqi Hu, Kelly Chan, Anna Ciriello, Morten H. Christiansen and Zhenghan Qi

It is not clear whether the artificial language learning paradigms in traditional statistical learning (SL) tasks relate to childrens' real-world language learning capabilities. The current study investigates the relationship between a statistical learning task and a phonemic serial recall (PSRT) task designed to reflect children's sensitivity to natural statistical patterns in language inputs. In the SL task, children were exposed to a stream of speech syllables with embedded triplets, then asked to repeat sequences containing familiar or unfamiliar triplets. In the PSRT task, children were asked to repeat sequences made up of high-frequency or low-frequency bi-syllable combinations, based on the CHILDES database. The difference score for the average number of correct syllables for SICR ((familiar - foil)/(familiar + foil)) and PSRT ((high-frequency - low-frequency)/(high-frequency + low-frequency)) were significantly correlated ($R = 0.31$, $p = 0.0072$). This provides a mechanistic link between childrens' statistical learning tasks and real-world language learning capabilities.

Examining early speech production in blind and sighted infants: babbling, words, and repetitions.

Eugenia Lukin and Elika Bergelson

Congenitally blind infants show a delay in early vocabulary production, but analogous language skills in adulthood. We investigated blind infants' earliest productions relative to age-matched sighted peers. In a corpus of daylong recordings (n=16/group), we classified vocalizations as noncanonical babbling, canonical babbling, single-word utterances, and multi-word utterances. Words were further classified into exact repetitions, partial repetitions, and nonrepetitions. Repetitions were also tagged for pragmatic functions. We found that blind infants produce fewer vocalizations than their sighted peers of all types, and a significantly lower proportion of canonical babble. We further found that blind infants' produced exact repetitions relatively more often than sighted peers, and half as many self-repetitions. Implications for early language learning mechanisms and trajectories in the context of sensory differences are discussed.

Elided questions in child Spanish: Where do prepositions go?

Victoria Mateu and Nina Hyams

Spanish prepositions can be omitted under sluicing, challenging the P-Stranding Generalization. Several analyses have been proposed –the ellipsis site (i) involves no movement, (ii) is reanalyzed as a cleft to avoid a violation, (iii) is isomorphic, P-stranding violations are repaired. Given children's well-known subject>object asymmetry in wh-questions, the latter two analyses predict a subject sluice advantage. Moreover, if omitted P sluices involve reanalysis, children should perform better when the P is explicit.

Getting the message across: Acoustic realization of information in maternal child-directed speech.

Bhuvana Narasimhan, Rebecca Scarborough, Allison Hilger, Kanupriya Kale, Justin Bai, Chloe Circenis, Tessa Moskoff, Zohar Naaman and Conner Moses

Child-directed speech (CDS) differs from adult-directed speech (ADS) in its acoustic features (e.g., pitch modulations, lengthened and hyperarticulated speech sounds) which regulate arousal and attention, help children interpret emotional signals, and highlight linguistic units that facilitate language learning. That is, they produce affective or pedagogical benefits. However, caregivers may also adjust their speech for informational reasons, to increase the salience of difficult-to-process message elements. We investigated how

caregivers, specifically mothers, adjusted speech to children versus adults when conveying messages varying in difficulty. Findings show that mothers increased vowel duration when conveying difficult-to-process (corrective) information to children versus adults, supporting an informational motivation for speech modifications in CDS. But pitch is only influenced by listener type, thus not all acoustic features serve to improve message intelligibility. By simultaneously examining listener- and message-driven effects, our study extends understanding of the communicative and cognitive factors motivating acoustic variation in maternal speech.

Lexical Tone Sensitivity in Blind, Non-Tone Language Speakers.
Nancy Eng, Stanley Chen, Lauren Levy and Zarina Rakhmanova
Ability of blind, non-tone language speakers to attend to lexical tone was evaluated. Previous studies have they superior auditory processing skills and enhanced verbal memory, outperforming sighted people on pitch discrimination, phoneme identification, rapid speech processing, and recall of letter and word sequences. Thus, we hypothesized that English-speaking, blind people are more sensitive than their sighted counterparts in using pitch contours for lexical access. Twelve monolingual English speakers without any exposure to tone languages, participated in this study. Six blind and six sighted speakers participated on word learning and sentence verification tasks to access attention to lexical tone. Results revealed that blind participants were significantly more to lexical tones than their sighted counterparts. Additionally, the blind group's response accuracy gradually increased over time for the blind group but not for the sighted group. Findings suggest that sensory compensation may extend to the processing and learning of unfamiliar linguistic features.

Attention influences children's order of mention in conjoined noun phrases but not in transitive sentences.
Sarah Dolscheid and Martina Penke
There are close links between the allocation of attention and language production in adult speakers. However, the same is unknown for children. To address this open issue, we tested 4- to 5-year-old German-speaking children in two picture description tasks using eye tracking: a noun pair naming task and a picture-based event description task. We manipulated children's attention by means of a brief cue presented in the place where the left character/the patient was about to appear. In both tasks, visual cueing was highly effective in modulating children's attention. However, while attentional orienting affected children's order of mention during the production of simple conjoined noun phrases, the same did not apply to the production of event descriptions that require the production of more complex syntactic structures such as passives. Taken together, effects of attention differed depending on syntactic complexity, hence demonstrating a complex interrelationship between attention and language production in children.

Perception precedes production past preschool, but children may learn the uncertainty of their own speech sounds.
Sarah Creel, Anges Vu and Kristie McCrary Kambourakis
A persistent puzzle in child language acquisition is how much a child's production reflects their perception. In infancy, perception far exceeds production: infants distinguish speech sounds they cannot yet produce. What of older children? We recorded 72 3-5-year-oldsnaming 24 pictures aloud, either before or after an experimenter named the same pictures. Then the child heard each recorded name played back (e.g. "wun") as four pictures appeared (run, one, ship, chip). They pointed to the picture they thought had been named as eye movements to pictures were tracked. At least for the sounds tested, young children's perception of their own speech was less accurate than adults' speech by about 13%. This is consistent with a Perceptual-Precedence Hypothesis. However, they appear less sure of their own accurate productions when those productions could be a different sound, supporting the Multiple Representations Hypothesis. Children may perceptually learn childlike speech patterns, possibly their own.

Differential effects of syntactic complexity in congenitally blind and sighted individuals: evidence from self-paced listening and reading.
Emily Silvano, Ziqi Chen, Zaida McClinton and Marina Bedny
This study examines how sensory experience influences language processing in people born blind. Unlike sighted individuals, who use visual cues and prosody to understand sentences complex sentences as garden path sentences, blind participants rely more on prosody. To investigate whether the advantage blind

individuals have in processing garden path sentences is due to their heightened sensitivity to prosody, we conducted an experiment where prosody was removed from a listening experiment and a reading experiment was added. 23 blind and 22 sighted participants took part in self-paced listening and reading experiments. Results indicated that, without prosody, blind participants had a greater GP cost in spoken sentence comprehension but not in reading. This suggests that blind individuals heavily depend on prosody cues. Future research will further explore the role of prosody in language processing for blind individuals. These findings support the hypothesis that lack of visual referential cues enhances sensitivity to prosody.

Clitics as prerequisites for Spanish DOM.
Penelope Daniel
Spanish has a well-known differential argument marking (DOM) pattern, where only animate, specific objects receive the case-marker a. Torrego (1998) argues that Spanish DOM involves a form of object shift, which raises specific objects into a position with special semantic and case-marking properties. Schaeffer (1997), building on Sportiche (1996), similarly argues that object shift in Dutch raises specific objects to the same position where object clitics are base-generated. I investigate whether Spanish DOM is connected to the Spanish clitic system: if languages differ in whether they provide this special clitic position, is its presence a 'prerequisite' for DOM in Spanish? If so, we may expect children to acquire clitics at least as early as DOM. I investigated longitudinal corpus data of 10 native Spanish-speaking children. There was a significant positive correlation between the acquisition of clitics and DOM, as well as a significant ordering effect, with children acquiring clitics first.

Infant's preference for and comprehension of child-produced speech.
Federica Bulgarelli
Infants' language development is tied to their linguistic experiences, but most of this research has focused on what infants hear from adult caregivers and how infants understand words produced by adults. However, children do not exclusively interact with adults, and speech from other children could influence learning. We ask if 9-14-month-olds 1) exhibit a preference for child-produced vs. adult-produced speech and 2) whether child-produced speech is harder to comprehend. Participants did not exhibit a preference for listening to adult- or child-produced speech in the preference task. In the comprehension task, younger infants (9-11-month-olds) did not exhibit above chance word comprehension. Older infants (12-14-month-olds) exhibited above chance word comprehension during the target window (367-2000ms post target word onset), but participants without older siblings exhibited better comprehension for adult-produced speech compared to child-produced speech. While infants do not prefer listening to child- or adult-produced speech, real-world experience influences processing of child-produced speech.

The role of language in building one and two-place predicates: event imitation in homesigners.
Irene Canudas Grabolosa, Madeline Quam, Marie Coppola, Jesse C. Snedeker and Annemarie Kocab
A key question in developmental psychology and linguistics is whether language merely expresses pre-existing concepts or provides new cognitive tools. De Villiers and colleagues suggest that abstract transitive relationships can only be reliably encoded via language, supporting this claim with evidence that infants and adults struggle with transitive role differentiation without language. This study examines adult Nicaraguan homesigners, an ideal case study because they lack conventional language but create personal communication systems. Homesigners and English-speaking five-year-olds were tested in an imitation task, revealing that both groups could accurately encode transitive relationships, with no significant differences between groups or event types. In the critical two-participant condition, performance was well above chance for both groups. These results suggest that the ability to encode and generalize transitive relationships exists independently of conventional language.

Highlighting the presupposition trigger helps: Evidence from Mandarin-acquiring children's interpretation of presuppositional you 'again'.
Ting Xu, Lyn Tieu and Stella Christie
Previous studies of the presupposition trigger 'again' have used the Truth Value Judgment Task, reporting successful acquisition by preschoolers. Yet these studies also excluded a number of child participants who responded as though they had ignored the trigger. A recent study with Mandarin-acquiring children used a

Question Answer Task and found that the majority answered the questions as if ignoring the trigger ‘you’ (‘again’). In the current study, 52 Mandarin-speaking children (4;01—5;12; M=4;10) and 33 adult controls participated in a Felicity Judgment Task. They listened to stories and judged which of two characters answered better after each story. Results showed children successfully understood the presuppositional trigger (albeit not at fully adult-like levels). We discuss why children might have failed to exhibit sensitivity to ‘you’ (‘again’) in previous tasks, considering the salience of the presupposition and potential differences in children’s and adults’ ability to locally accommodate presuppositions.

Consonants of infant-directed speech are hardly more intelligible than consonants of adult-directed speech, and what this implies for infant word segmentation models.
Daniel Swingley
Infant-directed speech is sometimes argued to be phonetically clearer than adult-directed speech. Maybe, but how clear is it? In several experiments, we asked native English speakers to identify the consonants in about 3600 VCV clips extracted from word onsets or offsets of IDS (Brent corpus) or ADS (Buckeye), under various conditions. Coda consonants were no clearer in IDS than ADS, with fewer than ¼ identified better than 50% of the time. Onset consonants were slightly clearer in IDS (60% correct) than ADS (50% correct). The task was feasible (many consonants were correctly categorized) but even in IDS, most consonants were not reliably identifiable, even in full sentence contexts low-pass-filtered to restrict access to the lexicon (Expt. 2). I will argue that computational-modeling approaches should not assume that infant word segmentation operates over strings of correctly identified phonetic categories, and will discuss some surprising patterns in the results.

American Sign Language transitive sentence comprehension strategies by deaf English-ASL bilinguals: the role of early language environment.
Qi Cheng
Most deaf individuals in the U.S. are English-ASL bilinguals with vastly different early language environments. This study examined the role of early language environment (native, early ASL, early Manually Coded English, early Oral) on ASL sentence comprehension strategies among deaf adults using bilingual proficiency tests and an ASL sentence-picture matching task. Our findings suggest that some non-native signers without early ASL exposure show less robust use of ASL word order and overall low bilingual proficiency. These findings indicate that early MCE signing and oral experience may not provide sufficient language input to support a robust first language foundation for ASL syntactic development.

Children’s acquisition of Hindi kinship terms: A study of partial word knowledge.
Nina Schoener and Mahesh Srinivasan
Although some words can be rapidly learned, others exhibit a protracted trajectory, in which a child’s initial production of a word can precede their full, adult-like understanding by months or years. The present studies probe the developmental trajectory of Hindi kinship terms which are relational, abstract, and semantically complex. Across two studies, we examined full and partial knowledge of kinship terms among Hindi-speaking children. We found that kinship terms that integrate more semantic features have a longer learning trajectory, and that semantic features which are more perceptually-available, like gender, are included in children’s representations earlier than more abstract features like lineage and consanguinity. We also found that children’s kinship-term definitions initially rely on stereotypical characteristics of individuals rather than familial relations (in line with a characteristic-to-defining shift). Together, these studies demonstrate how investigating children’s partial knowledge of difficult words can illuminate the developmental processes through which such words are acquired.

An acoustic study of pitch features of infant- and adult-directed speech in first and second languages.
Fenqi Wang, Andrew Cheng, Farzana Ali, Antonius Tam and Henny Yeung
This study examines pitch features in infant- and adult-directed speech (IDS/ADS) among bilingual caregivers speaking Cantonese (L1) and English (L2) in Anglophone Canada. Data from seven families with 14 caregivers were analyzed using LENA recordings. A Praat script extracted pitch features from 4,921 audio clips, which were then analyzed using linear mixed-effects regression models. Results showed that for mothers, pitch was higher in IDS regardless of language, while for fathers, pitch was lower overall in L2.

There were no interactions between register and language for either group. Additionally, mothers showed no significant difference in pitch variation, whereas fathers exhibited less pitch variation in IDS compared to ADS. These findings highlight distinct pitch patterns in IDS and ADS among bilingual parents and suggest cultural variations in pitch use within multilingual families.

Failures Succeed in Affirming Negation: Event perception and negator learning.
Victor Gomes, Yubin Huh, Heesu Yun and John Trueswell
Truth-functional negation poses remarkable challenges to accounts of word learning. When someone utters, "It is not raining," what information is available from observing the world that leads to such a thought? Whenever it is not raining, the weather is any number of other things (e.g., sunny, snowing), and these are presumably much more available immediately. If early language learners are limited in their inferential abilities and knowledge about the world, it's unclear how they could learn what "not" means from such cases. We propose that event perception can spontaneously provide a construal of an event to an observer before it is completed, and thus cases of failure could provide strong and reliable evidence of a negative construals through development. When failures are commented upon, they may therefore serve as ideal negator-learning contexts. Our theory was supported by production data showing both children and adults reliable describe failures with negation.

Overcoming performance issues: Children respect presuppositions of "the" -expressions.
Yuanfan Ying, Alexander Williams, Valentine Hacquard and Jeffrey Lidz
Elicited production studies have suggested that children up to the age of 5 sometimes use singular "the"-expressions in non-adult-like ways, i.e., when the referent is not familiar to interlocutors or not unique in the domain. However, unnatural settings in prior studies may be responsible for children's production errors. We present a new elicitation-through-conversation study that creates a more natural production setting. By controlling for referent salience and incorporating natural turn-taking, we find that 4-year-olds, just like adults, respect the presuppositions of "the" even in elicited production. They never used definites when intended referents were unfamiliar to the listener; after introducing referents, they mostly used definites to refer to a unique referent and much less so with a non-unique one. This implies, contrary to prior work, that we have little reason to believe that children have the wrong meaning for "the" or lack the pragmatic capacity to use it properly.

2.1 Keynote Address

Sign Language Acquisition is a Human Right
Diane Lillo-Martin
All children have the right to learn and use the languages of their communities. Decades of research have demonstrated that provided robust and early input, Deaf or hard-of-hearing (DHH) children acquire natural sign languages in very much the same way that natural spoken languages are acquired. Similarly, hearing children born to deaf, signing parents acquire the sign language of their parents and the spoken language used around them, becoming bimodal bilinguals. In recent years, advancements of hearing technology have greatly improved access to spoken language for DHH learners. Nevertheless, there is still a high degree of variation in DHH children's spoken language development. With this in mind, some hearing families are pursuing both sign language and spoken language for their DHH infants. In such contexts, some children become dominant in signing while others become dominant in speech, but early bimodal bilingualism offers all DHH children the advantages of both language modalities as their linguistic human right.

3 Friday Posters (Session I)

Knowledge of Morphological Case in Adult Heritage Western Armenian
Annika Topelian and Acrisio Pires
This study investigates adult heritage WA speakers' knowledge of morphological case. The results of an acceptability judgment task (AJT) and an elicited production task (EPT) reveal that WA heritage speakers

demonstrate consistent knowledge of different case forms (nominative/accusative, genitive/dative, ablative), but may not distinguish different noun classes in their knowledge of WA case marking. These results lend some support to the claim that inflectional morphology, particularly nominal morphology such as case, tends to be especially vulnerable in HL grammars. However, given that WA has been developing outside its original homeland in multilingual diaspora communities for more than a century and has no monolingual/home country counterpart, these results are also considered from a perspective of language development and change in conjunction with relevant contextual and sociohistorical factors.

Heritage children's real-time processing of case marking cues in which-questions: Evidence from a cross-national eye-tracking study on heritage Greek in the UK and the US
Vicky Chondrogianni, Jiuzhou Hao, Aikaterini Pantoula and Richard Schwarttz
In this cross national study, we examined whether Greek heritage children can process can-marking when comprehending which-questions in real-time. We tested two groups of Greek-speaking heritage children exposed to ML English using the visual world eye-tracking paradigm. One group resided in Edinburgh and the other in New York City. The EDI children were younger but had better offline knowledge of case and higher HL exposure. Results showed that both groups used cues in non-canonical positions to establish the target (patient), overriding their general tendency for agent-first interpretation. At the same time, temporal differences demonstrated that the EDI but not the NYC group had earlier, more efficient, and less opportunistic cue integration driven by better knowledge of case despite being younger.

Predictive use of case marking in (non)canonical sentences in Czech children
Filip Smolík and Jolana Treichelová
In a visual-world experiment with 29 Czech children (2;11 to 6;3, data collection ongoing) using an eye-tracker, we investigated the predictive use of case marking in the comprehension SVO and OVS sentences. Children saw pictures showing one character in the middle acting upon the character or object on one side, and being acted upon by another character on the other side. While watching, children heard sentences with the initial noun either nominative or accusative, resulting in SVO or OVS word order. We examined the looks before and after the onset of the sentence-final noun. Children looked towards the agent character in the picture when hearing OVS sentences, even before the sentence-final noun was presented, This was not the case with SVO sentences. The effect occurred also in the younger half of the sample only (below 4;4). Clearly, Czech children can readily comprehend noncanonical word orders using case marking information.

Distributional Learning of Syntactic Islands
Julie Anne Legate and Charles Yang
Syntactic islands are typically conceived as impossible structures that PROHIBIT movement. We propose a distributional approach that identifies the possible structures that ENABLE movement. We formulate movement is a Markovian sequence of traversed projections. Each step represents movement out of a maximal projection XP onto another maximal project YP. By invoking the Tolerance Principle, XP→YP is a non-island if for N members of the category X in the learner's vocabulary, at least (N-N/lnN) members are attested in movement. If the number of attested members in X fails to reach the threshold, they will be lexically memorized as selective islands without generalization. If no member of X is attested in movement, XP is a strong island. A corpus analysis of child-directed English successfully demonstrates the learnability of islands, including the learnability of long-distance movements enabled by the Markovian formulation.

Semantic Training Signals Promote Hierarchical Syntactic Generalization in Neural Networks
Aditya Yedetore and Najoung Kim
This study examined whether neural networks without an innate hierarchical bias can achieve hierarchical syntactic generalization when trained on both form and meaning. We trained neural network models on the task of English yes/no question formation, a phenomena for which correct generalization requires knowledge of hierarchical structure. The networks' training data was composed of artificially generated sentences which are consistent with both the linear and hierarhical genearlizations. Models were trained on either form alone or additionally trained to translate sentences into logical representations of meaning. Our results show that networks trained solely on form generalized linearly, while those trained on both form and meaning favored hierarchical generalization. These results point to the possibility that that statistical learners without hierar-

chical biases can leverage semantic training signals to bootstrap hierarchical generalizations, and support the hypothesis that human-like syntactic generalization need not require an innate bias for hierarchical syntactic structure.

Rage Against the Machine: Comparing Human and Model Performance with Adjective Learning

Megan K. Gotowski and Forrest Davis

During word learning, children recruit syntactic environments (frames) to map a form to a meaning. While adjectives are often found in individually un(der)informative frames, tracking them across environments is revealing for subcategorization. Nevertheless, the relative contribution of individual syntactic cues has yet to be determined—thus, it remains unclear which cues in the input learners are "bootstrapping" during the learning process. Using a fill-in-the-blank paradigm, we assess the influence of frames associated with 5 subtypes of adjectives. We couple these experimental findings with an analysis of a language model trained on CHILDES to tease apart whether learners could be simply tuned to regularities in input or are sensitive to deeper properties of grammar. Overall, our results suggest humans recruit syntactic information in a way that goes beyond simple co-occurrence patterns learned by a language model, and that although frames may be compatible with multiple classes, not all are considered equally.

Proficiency effects in addition to age effects on ERPs for gender agreement processing in French children

Gabrielle Manning, Guillaume Blais, Judicaël Ludwig Fassaya, John E. Drury, Karsten Steinhauer and Phaedra Royle

The current study aimed to tease apart the effects of age and linguistic proficiency on grammatical gender agreement processing in first-language French-speaking children using an audio-visual task. Older children (7–8 years old) elicited an increased frontal and central negativity, in the typical N400 time-window, to gender incongruent agreement errors (e.g., un soulier *bruneF) in relation to congruent constructions (e.g., un soulier brunM). Younger children (4–6 years old) show a reduced posterior N400 to agreement errors. Children with high linguistic proficiency (100% on a grammaticality judgement task) show that agreement errors elicited an increased left-lateralized negativity between 400–800 ms. Children with low linguistic proficiency (<100%) exhibited a posterior negativity. The findings suggest that gender agreement is still consolidating in young French children, due to the presence of immature components and that proficiency influences gender agreement processing for French adjectives, in addition to age effects, between ages 4–8.

Neuroplasticity for phonological awareness in deaf children

Melody Faith Schwenk and Bradley White

Reading is traditionally thought to rely on mapping sounds to letters and phonological awareness. However, deaf-signing children become skilled readers, indicating another mechanism is at play. This study compared reading mechanisms in deaf and hearing children, revealing differences in phonological processing. Using a lexical decision task, children evaluated orthographic and phonological conditions. Deaf children showed higher accuracy but slower reaction times in orthographic compared to phonological decisions, indicating enhanced visual processing. Their phonological decisions were as accurate and faster, suggesting efficient integration of visual sign phonology. Hearing children excelled in phonological decisions, relying on auditory processing. Functional near-infrared spectroscopy (fNIRS) revealed significant differences in brain activation patterns in left hemisphere activation in the fusiform gyrus (LFG) and posterior superior temporal gyrus (LPSTG), with LFG activation linked to the visual phonological loop in deaf children. These findings emphasize the significance of processing visual language and its potential to improve academic achievement.

Clause-edge Re-representations of Wh-fillers Across Native and Nonnative Speakers: Evidence From -band Oscillations

Laurent Dekydtspotter, Kate Miller, Michael Iverson, Jih-ho Cha, Jane Gilbert, Kent Meiner, Ludan Yang and Hongyu Zhang

Recent neurocognitive hypotheses identify cortical gamma (:>30Hz) oscillations with the implementation of basic operations for Merge (Kazanina & Tavano, 2023; Murphy, 2024). In interaction with slow delta oscillations for phrasal arrays (Ding, 2022; Meyer et al., 2019), oscillations enable a neural processing

loop in recursion. Recursion in wh-filler re-representation requires reinstating the wh-filler from working memory for combination first with a clause-edge category (C) selected by the bridge verb and then with a tense category (T) requiring a subject and a verb phrase marked by the subordinator. Using biclausal wh-filler-gap dependencies in L1 and L2 French, we examine cortical oscillations as signaling a predictive mechanistic processing loop engaged in wh-filler re-representation. We report -power biases matching lexical specifications for wh-fillers consistent with lexically based grammatical computations. Across-group effects challenge theories of thwarted prediction, retrieval, or structure-building operations.

The influence of discourse context on children's use of conversational devices
Cynthia L. Boo and Letitia Naigles
Adult speakers adjust their uses of conversational devices, namely backchannels (e.g., mhm) and/or shared linguistic repertoire (linguistic alignment, the reuse of interlocutor's lexical items, syntactic structure, and/or semantic content), based on context. For instance, adults produce more backchannels in spontaneously-occurring conversations (SOCs) to maintain social relations, whereas they align lexically and syntactically at higher levels in task-oriented conversations (TOCs; Dideriksen et al., 2023). While this is the case for adults, it remains unclear whether children are sensitive to the same contextual demands in child-to-child discourse. Further, little attention has been paid to other devices, such as discourse markers (DMs; e.g., you know), which also support discourse organization. In this study, school-aged children engaged in SOCs and TOCs with a peer. Replicating patterns reported among adult speakers, we found that children produced more backchannels and DMs in SOCs and lexically aligned at higher levels in TOCs, suggesting sensitivity to contextual demands.

The Influence of Information Structure on Children's Production of Adverbial Clauses
Shijie Zhang, Silke Brandt and Anna Theakston
Efficient communication builds on the information we already share as common ground (given information). In what order the given information is presented, and in which syntactic structure the given information is located affect how easily we process the information. The present study investigates how information structure influences the production of adverbial clauses (before-, after-, because- and if-clauses) in two clause orders (main-subordinate, subordinate-main) using a sentence repetition task. Preliminary results show that four- and five-year-olds (N=86) produced sentences more accurately when given information came before new information, regardless of whether the given information was in the main or subordinate clause. Eight-year-olds (N=40) also produced sentences containing given-before-new information more accurately, but only when the given information was in the initial subordinate clause (subordinate-main order). This indicates that young children already show sensitivity to information structure in their production, and the given-before-new information structure facilitates their processing of adverbial clauses.

The development of German children's production of polite linguistic forms from age 12 months to 8 years
Elizabeth M. Kolln and Jennie Pyers
Using polite language is complex, since speakers must simultaneously consider many social cues. Polite language becomes increasingly complicated in languages that distinguish formal and informal pronouns, like German. While previous studies suggest a slow developmental trend for polite language, recent research has found production of formal forms at earlier ages than expected. The present study examined developmental trends of formal language production in German children by examining corpora data from CHILDES. Children's usage of informal and formal pronouns, greetings, and farewells was examined, along with their usage of "please" and "thank you." Results indicated a significant developmental trend in the production of informal and formal pronouns, along with "please" and "thank you," such that children used these forms more frequently as they aged. Across all analyses, children used informal language significantly more frequently than formal language. Notably, contrary to previous findings, older two-year-olds sometimes produced formal pronouns.

Validating iCatcher+: Automated Gaze Coding for Infant Research
Leah Simon, Elena Luchkina and Sandra R. Waxman
Eye-tracking offers valuable insights into human cognition, especially for populations like infants who can-

not communicate verbally. By analyzing infants' gaze direction alongside other behavioral or physiological measurements, researchers can understand their responses to visual and auditory stimuli and inform our understanding of their cognition. However, conventional in-lab automated eye-tracking is expensive and requires specialized equipment and skills. An alternative is manual video coding by humans, which is more cost-effective but time-consuming and requires extensive training. iCatcher+, an automated gaze coding tool for video recordings, may alleviate these challenges. We compare results obtained by iCatcher+ against human coding utilizing a dataset of videos from an infant cognition study. Results show strong agreement (88%) between iCatcher+ and human coding, supporting its use as a viable alternative to human coding for developmental research.

Automatic detection of the visual gaze components of joint attention in observational, naturalistic child language acquisition data

Miranda Dickerman, Anshul Gupta, Samy Tafasca, Xiaocheng Zhang, Jean-Marc Odobez and Sabine Stoll

This study aims to describe gaze behaviors in joint attention interactions within natural settings and assess the potential of machine learning tools for automated annotation of gazepoints and gaze behaviours. Previous work in the area has relied on eye-tracking equipment, limiting the 'naturalness' of the data. The authors compiled a large dataset from an observational, naturalistic language acquisition corpus collected in the homes of six children aged 2 to 4 years, manually annotating gaze components such as shared attention and eye contact. Frame-wise analysis of the data showed, for example, that gaze points are closer during joint attention, despite the messy, naturalistic dataset. This distinction was successfully captured by pre-trained gaze models. Results overall indicate that pre-trained gaze detection models perform relatively well on the new datatype, and that fine-tuning improves their effectiveness. This suggests promising potential for future work on naturalistic gaze behaviour in language acquisition.

Developmental change in acquiring overhearable words within naturalistic contexts

Yuchen Jin, Ruthe Foushee, Kennedy Casey and Marisa Casillas

Overhearable speech constitutes a large proportion of children's everyday language input, yet its impact on early language development remains largely unexplored. Compared to directed speech, early word learning through overhearable speech may follow a different trajectory, reflecting an expansion in the types of linguistic inputs that children harness in learning words. The current study aimed to investigate whether and when US English-learning children understand words that primarily appear in overhearable speech. Using a looking-while-listening paradigm with children aged 18, 24, and 30 months, we found that children aged 18 months did not yet reliably recognize the overhearable words, while children aged 24 and 30 months did. All groups demonstrated recognition of directed words matched to the overheard words in overall frequency and interest. The findings shed light on learning through overhearing in naturalistic contexts, paving the way for a more comprehensive model of vocabulary development.

Examining Moderators of Convergent Validity Between Looking-while-listening and Caregiver Report Measures of Word Knowledge

Haley Weaver and Jenny Saffran

Assessing toddlers' word knowledge is challenging, thus the indirect methods researchers use to investigate word knowledge must be valid. Prior assessments of convergent validity between the gold-standard language methods—caregiver report of vocabulary and looking-while-listening tasks—have been inconclusive. This study investigated whether caregiver report aligns with looking-while-listening behavior when accounting for differences in how the two methods assess word knowledge. Toddlers (18–20 months) completed a looking-while-listening task that varied the target and distractor images used to assess their comprehension of eight nouns. Caregivers reported whether their toddler understood or said these words and rated their confidence in their response. Caregiver report of the target and distractor words were jointly predictive of looking-while-listening behavior. Similarly, alignment between the measurements was higher when caregivers were more confident in their responses. These results suggest that caregivers can accurately report word knowledge, underscoring the importance of considering task features when assessing convergent validity.

Verb semantic neighborhood density differently affects verb recognition in 24-month-old late talkers and typically developing peers

Justin B. Kueser, Claney Outzen, MaryCarson Adams, Barbara Brown, Sharon Christ, Campbell Patterson, Risa Stiegler and Arielle Borovsky
Two-year-olds' recognition of nouns is affected by vocabulary size, the density of semantic interconnections among vocabulary words, and semantic interference from related referents (dog/cat vs. dog/apple). Noun recognition under high semantic interference is more negatively affected by semantic interconnectedness for children with typical vocabulary sizes (typically developing: TD) compared to children with small vocabulary sizes (late talkers: LT). We ask whether these factors also affect verb recognition. Ninety-one 24-month-olds completed an eye-tracking task (61 TD/30 LT) with pairs of verbs in high- vs. low-overlap trials (bite/drink vs. bite/fix). Verbs' clustering coefficient measured the density of semantic interconnections among semantic neighbors. Unlike in noun recognition, under high semantic interference, verbs in dense semantic neighborhoods were recognized more robustly as vocabulary size increased. Differences across children in how vocabulary structure affects verb recognition may explain the persistent differences in verb vocabulary semantics in late talkers and older children with developmental language disorder.

Noun-label extension reflects another's intentional actions but not their efficiency
Mohit Mukherji and Moira R. Dillon
Do nonlinguistic representations of the goal, efficiency, and path of an agent's action influence adults' and children's categorization of agents using verbal labels? Participants were shown different scenarios where a shape (actor) labeled with the novel noun 'wug' navigated by a C-shaped path with or without obstacles and in the presence or absence of a goal. They were asked whether other actors were also wugs. Participants who saw an actor with a goal extended 'wug' to actors following the same path, regardless of obstacles, but not to actors taking a more efficient path when the obstacle was removed. This suggests that the specific path of motion is more salient than efficient goal-directed action in categorizing agents with noun labels. These findings differ from infants' expectations in nonlinguistic tasks and suggest that noun label extension may rely on prelinguistic representations of both agents and social beings.

Limited cross-linguistic variation in the lexical statistics of nouns in early vocabulary
Samah Abdelrahim and Michael Frank
The shape bias, which is children's tendency to generalize novel nouns by their shape, instead of other attributes like color or texture, has been argued to facilitate early noun learning for children. However, there has been conflicting evidence on the source of its reported variation cross-linguistically and cross-culturally. One proposal argues that shape bias is a generalization of the lexical statistics of early vocabulary i.e. being predominantly comprised of nouns referring to solid objects that are characterized by shape. In this study, we evaluate the first 300 nouns in the MB-CDI forms of 16 languages. We found no variation in the vocabulary composition across languages i.e. they are comprised of comparable proportions of count nouns that refer to solid objects. Additionally, solid object proportions of 5 languages don't show a clear relationship with the shape bias meta-analytic estimates extracted from a recent meta-analysis of shape bias.

Does Brief Exposure Allow 6-month-old English-Learning Infants to Link German to Cognition?
Alison Margaret Lobo and Sandra R. Waxman
Starting at 3-4 months, listening to language boosts infants' object categorization performance, while listening to nonlinguistic signals (e.g., tone sequences) does not. This link between language and cognition is initially broad enough to include some nonnative languages. German, a language prosodically similar to English, boosts object categorization performance in 4-month-old English-learning infants, but by 6 months, infants tune to just their native language. Here, we ask whether brief exposure to German can reinstate the link between German and cognition in 6-month-old English-learning infants. Infants view a 3-minute video of a colorful storybook narrated in German, followed by a now standard object categorization task paired with German. Data collection is underway, but preliminary results suggest that brief exposure to German boosts infants' performance on the object categorization task. This line of research will illuminate infants' remarkable plasticity and the powerful shaping role of language experience on early cognitive development.

Does Variability in the Presentation Schedule Impact Minimal Pair Word Learning? Assessing the Interleaving Effect in 14- and 17-Month-Old Infants

Melina Lauryn Knabe, Tom Fritzsche, Alan Langus, Marc Hullebus, Adamantios Gafos and Barbara Höhle
Learning minimally different words like bih/dih is challenging for infants at 14 months, unless additional cues —such as variability—are provided. Another type of input variability, namely order presentation, has not yet been investigated in this context. Studies with adults have shown that alternating, or interleaving, the presentation of category exemplars (abcabcabc) benefits visual category learning in comparison to blocking (aaabbbccc). The current study assessed whether this effect is present in the auditory domain for infants' minimal pair word learning. Fifty German-speaking 14- and 17-month-old infants were tested on a modified version of the switch task implemented on an eye-tracker. Infants had to learn minimal pairs (buk, puk) presented in an interleaved schedule. Surprisingly, they failed to learn the words and a beneficial effect of interleaving was not observed. The findings remain inconclusive at this stage, yet ongoing work will reveal whether blocking, as opposed to interleaving, might boost learning.

The acquisition of complex syllabic onsets in Catalan children
Duna Ninyerola, Anna Gavarró and Eulàlia Bonet
We investigate the acquisition of word-initial complex onsets in Catalan children. We designed an elicitation task of complex clusters that was administered to 27 Catalan-speaking children (age range: 2;2–3;3; mean: 2;10). The stimuli consisted in a short story featuring disjunctive questions the answer to which contained a target cluster. Catalan children presented a consistent pattern of cluster reduction to C1, contrasting with the patterns observed for Spanish (Lleó & Prinz 1996) and Dutch (Jongstra 2003). Two analyses are compared. For a frequency-based analysis, we conducted a frequency study of the target clusters in child-directed speech, and found that frequency didn't predict the pattern of child performance. Within a sonority-based analysis, we can capture the relatively worse performance with [fl, f] compared to clusters with stops as C1. Results also show that C[l] clusters are produced more often as target than C[ ] clusters, implying a sonority relation between [l,].

Acquisition of relevance implicatures in preschool Mandarin-speaking children
Zeying Gao and Peng Zhou
This study investigated how preschool Mandarin-speaking children acquire relevance implicatures, which occur when speakers are assumed to make contributions relevant to the conversation. Prior research has mainly focused on children speaking Indo-European languages. This study investigated Mandarin-speaking children's comprehension of relevance implicatures. In addition, the study examined how levels of relevance and cognitive abilities, such as theory of mind (ToM) and inhibitory control, affect this process. 96 children aged 3 to 5 participated, using tasks assessing their comprehension of relevance implicatures, ToM, and inhibitory control. We found that children's performance improved with age, with 5-year-olds showing adult-like performance. Participants performed better with relevance implicatures of a high level of relevance than those of a lower level of relevance. ToM significantly predicted performance, while inhibitory control did not. We discuss the findings in relation to an interaction between children's real-world knowledge, lexical semantic networks, and ability to infer others' intentions.

Can someone really fall in despair?: Facilitating children's processing of metaphors through Theory of Mind training
Fatma Nur Ozturk and Duygu Ozge Sarisoy
Previous research suggests a correlation between metaphor processing and theory of mind (ToM) in middle childhood and adulthood. However, the nature of this relationship remains unclear. This study aims to investigate (i)whether such a positive relationship exists in younger children (than previously tested) and (ii)whether training ToM would facilitate metaphorical processing in preschoolers. Turkish-speaking children (MeanAge:4;03&5;03) participated in a randomized controlled design pre- and post-testing their metaphorical processing and ToM abilities. Following pre-tests, our experimental group(N=44) underwent a 6-week-ToM-training which involved stories and games enriching their mental state vocabulary, while our control group(N=28) participated in neutral story-book reading and free-play activities. Results showed that ToM-training facilitated both ToM abilities and metaphorical processing skills. To our knowledge, this is the first study to demonstrate such a transfer effect from cognitive to linguistic domains. Whether similar transfer effects are observed in other pragmatic domains remains a viable issue worthy of further exploration.

Children project the presuppositional inferences of co-speech sound effects
Alyssa Vorobey, Nadia Faehndrich and Lyn Tieu
Recent work in formal semantics/pragmatics has focused on the meanings of co-speech gestures, which occur simultaneously with speech. These are argued to contribute not-at-issue meanings similar to lexical presuppositions, crucially projecting from environments such as negation. The presuppositional account has been extended to co-speech sound effects, with experimental evidence that these display similar projective patterns to gestures. Acquisition studies of presupposition have naturally focused on lexical triggers such as too and the definite article. Here we investigate whether English-speaking children are able to: (i) integrate co-speech information originating in another modality; and (ii) project and/or accommodate presuppositional information arising from this modality in an adult-like way. We find that children are not only sensitive to information contributed by co-speech sound effects, they also, like adults, treat this information as presuppositional, projecting it from the scope of negation. These findings extend the investigation of presupposition development into new modalities.

Do second language speakers gesture more or gesture differently when seeing vs when not seeing their communicative partners?
Himmet Sarıtaş and Seyda Ozcaliskan
Gesture and speech form a tightly integrated system in second language (L2) production contexts, with L2 speakers frequently relying on gestures to compensate for the difficulties they face in L2 speech production. However, most of this earlier work focused on the integration of the gesture-speech system in face-to-face contexts, where the interactive partners can see each other's gestures. In this study, we asked whether the lack of visual access to an interlocutor influences L2 speakers' token and type diversity of gesture production and the pragmatic function of gesture use in such contexts. Our findings highlight the important role gesture plays in L2 communication across different conversational contexts and suggest that L2 learners use gestures not only for their interlocutors but also for themselves in their interactions.

Mandarin-speaking Infants' Sensitivity to Truth-functional Negation
Yanting Li, Xiaolu Yang, Stella Christie and Rushen Shi
The study examines early understanding of truth-functional negation in 48 Mandarin-learning 22-month-olds using the habituation-switch paradigm. Participants were first habituated with two videos, each featuring a novel noun or verb. In the test phase, the sentence-video associations were switched. Half of the participants were assigned to the Negative Noun (NN) condition where negative sentences were rendered false and the other half was assigned to the Negative Verb (NV) condition where negative sentences were true. ANOVA showed a significant interaction between Condition and Phase ($F(1,46)=7.258$, $p<.01$, $d=0.795$). Infants' looking time increased significantly more from habituation to test in the NN condition than the NV condition. An affirmative control experiment with another 48 infants revealed that infants could distinguish negative sentences from their affirmative counterparts. This study demonstrates that Mandarin-speaking infants at 22 months start to integrate the abstract meaning of negation words into a proposition and evaluate its truth value.

Children's derivation of scalar inference from or-sentences: Evidence from varying the degree of relevance
Maumita Bhaumik
Children's difficulty in deriving scalar implicature from or-sentences has been attributed to a variety of factors, the most prevalent of which is the difficulty in accessing the alternative. The present study explores whether children's pragmatic difficulty with or-sentences stems from their problem accessing the alternative or from discerning the relevance. Using a 4 between-subject design, Bengali-speaking preschool children were assigned to 4 different conditions: [+alternative, high-relevance]; [–alternative, high-relevance]; [+alternative, low-relevance]; and [–alternative, low-relevance]. Children had to understand a puppet's utterances which involved disjunctive utterances. Results indicate that children's implicature derivation is higher in high-relevance conditions than in low-relevance conditions, regardless of the presence or absence of the alternative. Findings contribute to the current debate regarding children's difficulty deriving SI from or-sentences suggesting that their difficulty lies in discerning relevance, and not in accessing the alternative.

Not nothing: the significance of timing differences in the acquisition of Afrikaans and Dutch geen ('no')

Theresa Biberauer and Marie van Heukelum

We report on comparative corpus-based studies probing the acquisition of the superficially identical, but distributionally distinct negative-indefinite geen ('no') in Afrikaans and Dutch. Unlike early-acquired Dutch geen, Afrikaans geen is late-acquired (post-5;00). We highlight that Afrikaans geen is discourse-marked in singular-count contexts, unlike Dutch, and that the CHILDES corpora show that it is infrequent in adult output, again unlike Dutch. In mass-contexts, where geen is unmarked in standard Afrikaans, child-directed speech features niks ('nothing'; e.g. niks melk 'no(thing) milk' for geen melk 'no milk'), a pattern that acquirers "boost" and also extend to count-contexts (niks goggas 'no(thing) bugs' for geen goggas). The standard pattern is learned at school, the niks-pattern retained in community varieties. Our study illuminates the distributional discrepancies and also the importance of (i) early vs late(r) acquisition in shaping grammars, (ii) individual lexical items in determining crosslinguistic variation, and (iii) children in understanding language variation and change.

L2 acquisition of Japanese negated disjunction and conjunction by L1 English and L1 Mandarin speakers

Tokiko Okuma

The interpretation of the conjunction "and" and disjunction "or" in negative sentences exhibit cross-linguistic variations. The negated conjunction and negated disjunction have disjunctive and conjunctive interpretations in English, while they have opposing interpretations in Japanese and Mandarin. These interpretive variations are attributed to scope interactions between the logical connectives and negation. Previous research suggests that L1 transfer and learnability are involved in L2 interpretation of negated disjunction. We investigated the interpretation of negated conjunctions and disjunctions by L1 English and L1 Mandarin speakers of L2 Japanese. The results show that L1 English speakers had more difficulty interpreting negated disjunctions than negated conjunctions, contrary to predictions based on learnability. We attribute the difficulty to the polysemy of the Japanese disjunct ka and cognitive complexity of negated disjunctions. Thus, apart from L1 transfer and learnability, the lexical and cognitive complexity of logical connectives are involved in L2 development.

Developmental differences in the categorization and quantification of partial objects

Karissa Sanchez, Kristen Syrett and Athulya Aravind

Children systematically diverge from adults in treating 'partial objects' (e.g., a broken piece of a fork) as if they were wholes when prompted with a count noun. Prior accounts attribute this behavior to children's still-developing numerical abilities or their still-developing nominal semantics/pragmatics. This research either addresses the quantification/numerical status of partial objects or their categorization/reference, without assessing the two simultaneously. Here, we ask how children and adults categorize partial objects, and how these same objects feed into assessments of cardinality. We find that children more often included partial objects as noun category-members, but even when they excluded them from the category, still counted them as |1|. We argue that children's categorization reflects a minimal-standard semantics for count nouns, but they further deviate from adults in lacking fine-grained counting skills for measuring parts.

(Im)possible determiners and their learnability

Tyler Knowlton, John Trueswell and Anna Papafragou

The best-known semantic universal is determiner conservativity. Roughly, the generalization is this: the truth of sentences like "every/most/some/no fish swim(s)" depend only on the things named by the determiner's first argument ("fish"). This rules out cross-linguistically unattested determiners (e.g., the hypothetical but non-existent "equi" –where "equi fish swims" means 'the fish and the swimmers are numerically equivalent'). Conservativity has thus been argued to reflect a fundamental property of grammatical architecture. If so, non-conservative determiners should be unlearnable. We find that in a simple task, adults are able to pair a novel determiner with a conservative meaning but not with the corresponding non-conservative meaning, and not with a 'weakly' conservative, but classically non-conservative, alternative meaning. Our results thus suggest that conservativity is tied to learnability and that the classical understanding of conservativity better describes the constraint that learners embody than a recently proposed 'weakening' of the

generalization.

Chinese L2 learner's interpretation of telicity in German
Lea Heßler-Reusch, Ting Xu and Xiaolu Yang
This study examines how Chinese L2 learners of German interpret telicity in adjectival resultatives and transitives. In German, telicity varies between these structures; adjectival resultatives are semantically telic, while telicity in transitives arises pragmatically. Chinese transitives have an ambiguous telic interpretation, while resultatives entail completion; additionally, Chinese telicity is influenced by the aspect marker le, unlike German. Prior research indicates that L2 learners may struggle with telicity in case of L1 differences, often allowing atelic readings due to L1 transfer. This study tests whether Chinese L2 learners of German judge telicity similarly to native speakers based on Weicker et al.'s (2024) study on German adults. In a Truth Value Judgement Task, participants judged resultatives and transitives against completed or incomplete events. Results show an overall good acquisition, but more telic interpretations in transitives than native speakers, as well as imprecise interpretations of resultatives, hinting to some persistent subtle difficulties.

Object animacy as a cue for learning mental verbs without propositional complements
Erin Humphreys and Misha Becker
The meanings of mental verbs are acquired in large part via their occurrence with propositional complements (Sue knows [that [NPsubj VPpred]]). However, many languages have a verb meaning 'know' that allows only NP complements; we call this 'obj-know', e.g. French (connaître). What in 'obj-know"s argument structure can serve as a cue to the mental state meaning of these verbs? Focusing on French, we found that connaître takes 68.9% animate clitic objects, significantly more than all other transitive verbs, and significantly more animate full-NP objects than other verbs except voir 'see' and regarder 'look'. We conjecture that acquisition of perception verbs supports acquisition of mental verbs through their shared regular occurrence with animate NP objects. For a mental verb that does not allow propositional complements, this link in their argument structure potentially serves as the critical cue that connaître denotes a cognitive/perceptual state.

The use of mutual exclusivity by monolingual and bimodal bilingual ASL users
Allison Fitch and Amy Lieberman
Mutual exclusivity (ME) is a word learning constraint in which the learner assumes that a given word refers to only one category of objects. In spoken languages, ME has been demonstrated in monolingual children as young as 17 months, while multilingual learners show an attenuated ME bias. ME has not been robustly demonstrated in deaf children acquiring ASL. Further, it is unclear if ME applies to those learning both a signed and a spoken language. The current study assessed this in a 2AFC paradigm. Children were presented with two toys and asked (in ASL) to give the experimenter one of them. The experimenter requested the object with eye gaze, with a novel sign, or both. Findings showed that monolingual and bilingual deaf children robustly followed gaze, but selected at chance in the other two conditions. Future work on ME in in ASL acquisition is warranted.

How modality-specific are statistical learning processes in the context of sign languages? Comparing native signers and non-signers
Lizzy Aumonier, Katherine Trice, Zhenghan Qi, Tess Latham and Julia Hofweber
This study investigated the effects of sign language expertise on general versus language-specific statistical learning skills. We compared 37 hearing non-signers (L1 English) to 27 native signers (L1 ASL/BSL, 15 deaf, 12 hearing). To assess sign language learning, participants were exposed to a weather forecast in a novel sign language (Swedish), followed by learning tasks. They then completed general visual statistical learning tasks. Our results revealed that native signers outperformed sign novices in sign language specific learning. Notably, meaning assignment accuracy indicative of semantic learning was significantly higher in native signers (M=40.23%) than non-signers (M=14.73%; $p<.001$). Crucially, the effect was due to sign expertise, not deafness: hearing signers' performance patterned with that of deaf native signers. Our results suggest that native signers develop modality- and language-specific learning skills resulting in heightened levels of sensitivity for extracting information from visual linguistic input.

Age of Acquisition Effects in TİD: Quantity and Quality of Nonmanual Markers in Telicity Marking

Aysemin Yaşar and Kadir Gökgöz

This study investigates Age of Acquisition (AoA) effects on telicity marking in Turkish Sign Language (TİD). Prior research has documented AoA effects in TİD's morphosyntax and pragmatics, but not extensively in morpho-phonology, particularly nonmanual markers. The study involved 30 signers (15 native, 15 late) who viewed videos and produced signs. Findings indicate that both groups similarly use continuous and discontinuous nonmanuals for telicity, suggesting telicity marking is resilient and possibly tied to cognitive event representation. However, differences were noted in the quantity and quality of nonmanual markers. Native signers used more nonmanual markers overall and demonstrated more frequent use of mouth gestures compared to late signers, who relied more on lip gestures. These disparities suggest early exposure aids in acquiring complex nonmanual features, likely due to better articulatory control and reduced interference from spoken language influences. Thus, while telicity marking itself is robust, nonmanual marker usage is sensitive to AoA.

Romanian-English bilingual adults are more recursive with adjectives in L1 than in L2

Deborah Foucault, Tom Roeper and Adina Camelia Bleotu

We investigate experimentally how bilingual adults (Romanian L1-English L2) interpret recursive adjective-modified sequences in contexts involving (sub)set contrasts in both languages ("flori mici roşii", lit. 'flowers small red' in Romanian L1, red small flowers in English L2). We ask whether the UG Recursive Set-Subset Ordering (RSSO) Constraint is observed equally in Romanian L1 and English L2, such that the adjective closer to the noun picks the set and the adjective further away picks the subset. We consider two theories: a full access to UG theory of bilingualism predicts that bilinguals should observe RSSO in both L1 and L2, a theory of transfer predicts bilinguals should struggle more with recursion in L2 English since Romanian L1 uses a mirror adjectival order of English L1. We find that bilinguals are recursive in both languages, but less so in L2, where RSSO seems to interact with language-specific differences (word order, (in)flexible cognitive AORs).

Complex Morphology in Romani can Resolve the Ambiguity of Multiple Possessives

Jill G. de Villiers, Hristo Kyuchukov and Tyler Poisson

Three studies are presented on recursive possessives, where double possessives (Dad's kid's bike) can have a recursive or a generic reading. Studies 1 and 2 used a 9 story task in which each story introduced both possessive interpretations and ended with a choice. In Study 1, English adults' interpretations allow either reading equally, but children strongly preferred the generic reading until age 7. Study 2 used a relative clause in two different ways to interrupt the noun sequence, and adults restricted their readings accordingly. Children easily got the generic reading but failed to get the recursive reading until 6 or 7 years. However, Romani-speaking children tested on the same stories and questions showed earlier mastery of the recursive reading, at age 5. This we explain by the rich agreement paradigm on possessives in Romani, where gender and number marking can link the nouns across a gap.

'Strong' weak-island effects in interlanguage: Arguments from D-linking

Takayuki Kimura

Island sensitivity in L2 syntax has been extensively studied. Adjuncts are strong islands in English, which strongly constrain extraction, while embedded questions (EQs) are weak islands, with milder constraints. Weak-island effects can be ameliorated by D-linked wh-phrases (e.g., Cinque, 1990). In Japanese, strong islands are inactive due to wh-in-situ properties, but 'strong' EQ-island effects occur due to Q-particle head-movement (Hagstrom, 1998; Cable, 2010). Given that the acquisition of English wh-question syntax by Japanese learners (JLEs) remains debated (e.g., Yusa, 1999; Miyamoto & Iijima, 2003), this study investigates intermediate JLEs' syntactic knowledge on island-effects and island-amelioration effects under D-linking. Results of an acceptability judgment task conducted with 41 native speakers of English and 35 intermediate JLEs showed NSEs had the expected strong/weak island distinction and amelioration effects with D-linked wh-phrases, while JLEs did not, suggesting failure to fully acquire English wh-question syntax.

Syntactic Maintenance of Tamil Relative Clauses in Multilingual Adolescents

Usha Lakshmanan
This study builds upon previous research on monolingual Tamil children's acquisition of relative clauses to investigate syntactic maintenance of relativization in Tamil in multilingual 9-17-year-old adolescents (L1 Tamil speakers, educated through the medium of English L2, and Hindi as an L3). A picture-cued production task eliciting Subject and Direct Object relative clauses in the three languages found that multilingual adolescents performed similarly regardless of age and language proficiency. In L1, adolescents produced tag, participial, and (unlike younger monolingual Tamil children) correlative relative clauses. The participial relative predominated, similar to 5;0 to 6;6-year-old monolingual children, unlike monolingual children younger than 5 years, who preferred the tag relative. In L2, the postnominal embedded relative clause predominated; in L3, their least proficient language, the correlative predominated. The findings indicate a privileged role for syntax in ensuring separation between languages in multilingual children's acquisition and use, thus promoting L1 maintenance, and preempting convergence.

Intervention effects in the acquisition of Italian sluicing: the role of Number Mismatch
Elena Pettenon, Emanuela Sanfelici and Victoria Mateu
This study investigates the acquisition of elliptical indirect wh-questions, i.e. sluicing, by Italian preschool children, with the aim to verify whether the locality principle of Relativized Minimality plays a role in the comprehension of sluicing. We administered a yes/no question task adapted from Mateu & Hyams (2021) to 80 Italian-speaking children (3;00-5;11). The results show that subject sluices are easier to comprehend than object sluices, thereby replicating in Italian the subject>object asymmetry found in both English sluices and Mandarin sluice-like constructions. Additionally, we found that object sluices with a number mismatch between the object DP and the subject DP are more accurately comprehended than object sluices with number match. This suggests that the comprehension of Italian sluicing is modulated by locality, as previously found for other A-bar dependencies. Our findings are compatible with a PF-deletion approach to sluicing, which postulates the presence of a full-fledged sentence in the ellipsis site.

Gradually increasing context-sensitivity shapes the development of children's verb marking
Hannah Sawyer, Colin Bannard and Julian Pine
The Competing Sources of Input (CSI) account argues 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?'). We test this account using two corpus analyses which first investigate whether there are input (subject+verb-sequence or verb) effects on children's (2- to 4-year-olds) errors and second how these different input predictors change over development. We find that the best predictor was the relative frequency of specific unmarked subject+verb sequences in the input. This effect persisted but weakened across development. The effect of the relative frequency of unmarked verbs, however, was only predictive early on. These findings provide evidence for the CSI account and are consistent with the assumption that children recover from making errors by becoming progressively more sensitive to context, at first just immediately preceding lexical contexts (e.g., 'she') and eventually more distant lexical contexts (e.g., 'does').

Acquisition of Variable Clitic Placement in Spanish-speaking Children
Emily Herman
The present study looks at patterns of variation in monolingual Spanish toddlers ranging from 22 months to 56 months of age. The variable form under investigation is variable clitic placement (VCP). In Spanish, pronominal clitics can refer to an object in the discourse or express the reflexivity of an action. In [finite + non-finite verb] constructions, pronominal clitics can attach either pre-verbally (proclisis; Ella lo quiere comprar 'She it wants to buy') or post-verbally (enclisis; Ella quiere comprarlo 'She wants to buy it'). In adult language, this variation is constrained by finite verbs and animacy of the referent (Davies, 1995; Schwenter and Torres Cacoullos, 2014; Requena 2015; Requena 2020). The present study finds that children as young as 22 months of age produce variation and are sensitive to different finite verb constructions than their caregivers.

(All) pronouns are difficult, but not delayed
evidence in favour of early Principle B acquisition - Nevena Klobucar, Raffaella Folli, Christina Sevdali and Juliana Gerard

While the referential properties of reflexives are acquired early, children up to age 6 may assign an ungrammatical referent to non-reflexive pronouns. Past studies have argued that this apparent delay in the acquisition of Principle B is due to either children's delayed grammatical competence, or to extra-grammatical processing. Within the competence account, it has been argued that only full pronouns in English (him, her) cause a delay, while reduced pronouns ('m, 'r) do not. This study tests comprehension of the two forms to clarify the status of Principle B in English, and it provides evidence in favour of its early acquisition. However, experimental data suggest a difficulty in referent-assignment which concerns pronouns in particular, but not reflexives.

The development of pronoun ambiguity resolution in primary school children
Angelika Golegos and Theodoros Marinis
Pronoun resolution has been extensively studied for over three decades across languages. However, studies on pronoun ambiguity processing in German have mainly focused on adults and therefore, little is known about its developmental path in children. Our study aims at filling this gap, by investigating pronoun ambiguity processing in primary school children compared to adults. We tested 6- to 8-year-old monolingually raised German children (n=42) and compared them to adults (n=65). Overall, results show similar processing patterns in children and adults. However, the preferences in the child group are far less consistent and show more variability than the adult preferences. Our study indicates that despite similar resolution preferences between children and adults, 6- to 8-year-old children do not yet resolve ambiguous pronouns in the same way as adults. This provides evidence of a developmental path: at the beginning of primary school processing of ambiguous pronouns is still developing.

5- & 8-year-olds' interpretation of ambiguous 'they'
Anissa Baird, Nicole Hupalo, Mahnoor Khurram and Emily Atkinson
The recent upswing in use of singular "they/them" has led to it becoming potentially ambiguous between singular and plural interpretations in cases like "Alex went running with Liz. They fell down" where Alex uses "they/them" pronouns. In contrast to pronoun ambiguity resolution studies in English that focus on binary pronouns, the current work uniquely investigates how children interpret "they" in these ambiguous cases. Specifically, 5-year-olds, 8-year-olds, and an adult control group underwent a partial replication of Arnold et al. (2021), wherein they answered comprehension questions regarding a series of two-sentence stories. Results show that children can successfully map the pronoun "they" onto a singular individual when there are no plural competitors and that they interpret ambiguous "they" similarly to adults, although 5-year-olds interpret "they" as singular more often than 8-year-olds. This indicates that older children potentially undergo a form of overregularization of "they" due to grammatical rules enforced at school.

How to ask questions to sons vs. daughters: Effect of play partner and play context
Ebru Pinar, Irem Kotuz, Campbell Leaper and Seyda Ozcaliskan
Asking children good questions is a critical tool for encouraging essential skills such as observing, predicting, classifying, analyzing, inferring, and communicating. Studies comparing language input provided by mothers and fathers found differences between parents in the types of questions they ask. Parents also vary their spoken input by play context, using more close-ended questions in feminine play contexts than in masculine play contexts. In this study, we asked whether the effect of each factor (play partner, play context) on parental input would vary by the child's sex. Beginning with play partner, our preliminary results showed that both mothers and fathers used more close-ended questions, but at comparable rates with their sons and daughters. Turning to play context, our preliminary results showed that both parents used more close-ended questions in the feminine play context.

Examining the Role of Teacher Feedback and Structural Features in Children's Vocabulary Learning during Book-Reading Conversations in Under-Resourced Prekindergarten Classrooms
JeanMarie Farrow, Annemarie H. Hindman, Barbara A. Wasik and Michael J. Farrow
This study investigates the mediation effect of structural features (complex syntax, lexical diversity) in the relationship between teacher feedback (information, vocabulary, expansion, follow-up-question) and children's vocabulary learning during book-reading conversations in under-resourced prekindergarten classrooms. Data

from 35 teachers and 519 children were analyzed using multilevel mediation modeling. Results indicate that teachers' use of complex syntax (SI), lexical diversity (MTTR), and follow-up questions predicted children's vocabulary growth, with information-feedback uniquely related to both complex syntax and lexical diversity. Indirect effects analysis revealed a significant pathway from information-feedback to vocabulary learning through complex syntax. These findings underscore the importance of providing children with informative feedback to support language development, particularly in underserved schools. This research contributes to understanding the mechanisms underlying effective language instruction in early childhood education.

The role of parental characteristics, home language experience, and language of schooling in children's Mandarin heritage language development in Canada

Vera Xia, Evangelia Daskalaki, Adriana Soto-Corominas and Johanne Paradis

This study focuses on heritage language (HL) development in Mandarin-English bilingual children in Canada. We ask how parental characteristics affect children's home HL use and type of HL schooling, and how home use and schooling affect HL outcomes (vocabulary and simple syntax). We recruited 47 children attending English-only schools, English-only schools and HL classes, or English-Mandarin Bilingual schools. Children completed the Mandarin LITMUS-CLT (for vocabulary) and an elicitation task for Mandarin wh-questions (a simple structure). Regression analyses showed that positive parental attitudes toward Mandarin and lower parental English proficiency predicted more home Mandarin use, which then predicted larger vocabularies and more accurate syntactic production in the children. Positive paternal attitudes towards HL literacy marginally predicted choice of Bilingual schooling. Bilingual school children demonstrated better vocabulary but not syntactic production compared to English school children. Finally, the effect of Bilingual schooling was more beneficial for children with less home Mandarin use.

Parental strategies in bilingual word learning

emily eloise bagan, Caitlyn Slawny and Margarita Kaushanskaya

Parents are thought to use different methods to teach their children words (e.g., labeling or pointing), but there are few prior empirical studies of parent behaviors during word learning activities. We examined bilingual Spanish-English parents' language use, labeling, and pointing in a parent-mediated word learning interaction. Parents' pointing was not associated with children's pointing or novel word productions. However, parents' and children's productions of novel words correlated. Children's language dominance and language skills did not influence parents' pointing or labeling behaviors. The interaction between parent dominance and portion of English used significantly predicted parent pointing ($p=.012$), such that bilingual parents who were more dominant in Spanish tended to point more as their proportion of English use increased. No factors significantly predicted parent novel word use. These results suggest that as bilingual parents use their less dominant language, they may increase use of gestures (pointing) to teach their children novel words.

Why does Mommy refer to herself in the third person?

Payton Summers, Kimberly Saudino and Sudha Arunachalam

A common feature of child-directed speech is using proper names in place of pronouns (e.g., "Can Mommy help you?" rather than "Can I help you?"). This phenomenon, known as an "imposter" use, may be a feature of parental "tuning"—parents may be implicitly aware that using proper names in addition to pronouns supports children's comprehension. We explore two (not mutually exclusive) reasons parents might do this: (1) as a global strategy to support comprehension in children whose skills are still developing, (2) as a local strategy to ensure clarity in situations where identifying the correct referent is crucial for successful communication. Our analysis of parent input in 62 English-speaking dyads with 36-month-olds revealed that parents used more pronouns than proper names overall, but were significantly more likely to use proper names in a challenging cooperative task than during free play with toys. Thus, imposter use may be a form of tuning.

On another topic, how do acquisition orders vary? The left periphery and topicalisation in bilingual and monolingual acquisition

Núria Bosch and Theresa Biberauer

We study the emergence of CP-structures in two bilingual children acquiring Italian/Dutch and Spanish/German, focusing on topicalisation. Our data reveals several consequential patterns: among others, CP-structures emerge early, irrespective of structural-height; and secondly, the acquisition of topics reveals

crucial language-specific discrepancies (Germanic topics vs Romance CLLD). These results are incompatible with bottom-up maturation, which anticipates neither early CP-structures, nor L1-conditioned (early/late) topic-emergence. Extant approaches that could accommodate our data (continuity, inward maturation) prove insufficiently predictive. We present a neo-emergentist interpretation (Biberauer, 2011, et seq.; Biberauer & Roberts, 2015), and demonstrate that the development of topics systematically varies as a function of their formal complexity (operator/non-operator) in each L1, not maturational constraints upon CP. Monolingual data across 10+ typologically-diverse languages corroborates our predictions. Overall, we underscore neo-emergentism's explanatory potential as an approach to syntactic development, which, unlike many extant accounts, predicts not just 'developmental universals', but also systematic variation.

Understanding and Creating Metaphors and Similes in Children with High-Functioning Autism
Maria Andreou, Stella Lampri, Theodoros Marinis and Eleni Peristeri
Individuals with Autism Spectrum Disorder (ASD) struggle with non-literal language, particularly metaphors. While nominal metaphors are well-studied, predicate metaphors and metaphor generation are less explored, while similes, considered more transparent, may pose fewer cognitive demands than metaphors. This study examined metaphor and simile comprehension and production in children with high-functioning ASD. Twenty-nine Greek-speaking children with ASD and 31 age-matched TD children undertook metaphor and simile comprehension and production tasks, including computer-based sentence-picture matching and sentence-continuation tasks. The children were also assessed on expressive vocabulary, fluid intelligence, and verbal working-memory. Responses in production tasks were categorized into targeted metaphors, literal answers, non-target metaphors, and inappropriate answers. Results show that children with ASD had significant difficulties in the comprehension and production of metaphors and similes, with high rates of literal and inappropriate answers due to impaired lexical and/or working memory skills.

An investigation of syntactic skills in High-Functioning Autism: Interactions with vocabulary and working memory skills
Konstantina Sonia Antoniou, Eleni Peristeri, Theodoros Marinis and Maria Andreou
In addition to persistent deficits in communication and social interaction, children with Autism Spectrum Disorder (ASD) have reported weaknesses in complex syntax. Empirical evidence from language production tasks, such as natural discourse generation and sentence repetition, does not provide a comprehensive assessment of syntactic abilities in children with ASD. This study aims to investigate the syntactic skills of children with high-functioning ASD and typically-developing (TD) controls through a sentence comprehension task and to identify relations between the children's syntactic comprehension performance and their language and executive function skills. The study included 29 Greek-speaking children with high-functioning ASD and 31 age-matched TD children.

Metathesis as a means of satisfying preferences of developing grammars
Eirini Ploumidi
Our object of study is metathesis, which is defined as the rearrangement of segments within the word (e.g. /C1VC2/→[C1C2V]). Metathesis is well-attested in child phonology (e.g. English: Smith 1973, Spanish: Macken 1979, Greek: Kappa 2002, French: Rose & dos Santos 2006 a.o.); nevertheless,a few studies theoretically investigate this strategy in the developing speech. This study focuses on data obtained in a longitudinal study of six typically developing Greek-speaking children (ages: 1;10-2;10, tokens: 32.000, elicitation of spontaneous speech and usage of picture/object-naming tasks) and explores distinct metathesis patterns in child Greek that occur in marked syllable constituents, i.e. in final and medial codas and branching onsets (clusters) in (non-)initial (un)stressed syllables. It is argued that the theoretical analysis of the emergent patterns requires the consideration of several grammatical factors, i.e. (un)markedness, OBLIGATORY CONTOUR PRINCIPLE (OCP, Goldsmith 1976), CODA CONDITION (Itó 1986) and SYLLABLE CONTACT LAW(Vennemann 1972).

Immunity to agreement attraction and limitation of cognitive resources in non-native language comprehension
Itsuki Minemi, Takayuki Kimura, Takaaki Hirokawa, Yu Tamura and Junya Fukuta
We investigated the processing mechanism underlying immunity to agreement attraction in non-native lan-

guages, conducting two self-paced reading experiments. Previous research argued that non-native speakers (NNSs) are prone to attraction when sentences are complex enough to induce a high processing load because it would prevent additional control of the non-native language from avoiding attraction. We investigated whether semantic complexity of attractor NP with quantifier every, which may induce a high processing load, leads to agreement attraction in non-native languages. In Exp. 1 using simple sentences without a quantifier NP, native speakers (NSs) of English (N=57) showed attraction, but Japanese-speaking learners (N=52) did not. In Exp. 2 using complex sentences with a quantifier attractor, NNSs (N=46) did not also show attraction nor even sensitivity to agreement violation.

The scope of disjunction and negation: evidence from L2 Mandarin and Spanish
Anna Gavarró, Jin Yan and Elena Pagliarini
Cross-linguistic variation in the interpretation of a sentence such as John didn't order milk or coffee has been attested: it can be interpreted as neither (NEG>OR) or as not both (OR>NEG) (Szabolcsi 2002; Crain 2012). This variation seems to disappear in L1 language acquisition, as children prefer the neither interpretation across languages (Semantic Subset Principle, Crain et al. 1994). We conducted a bidirectional study in order to investigate how L1 Mandarin L2 Spanish and L1 Spanish L2 Mandarin adult learners interpret negated disjunction. We found that L1 Spanish and L1 Mandarin adult speakers prefer the not both interpretation, whereas both groups of L2 speakers differed from their respective L1 group, as they preferred the neither interpretation. Our results support the Full Access without Transfer hypothesis (Epstein et al. 1996), as L2ers applied the Semantic Subset interpretation, as is the case in L1 acquisition.

Developmental trajectories of German as spoken language in normal and hard of hearing children with forced displacement background: a pilot longitudinal study
Lina Abed Ibrahim, Barbara Hänel-Faulhaber and Solveig Chilla
Orally-trained children with moderate to severe hearing loss show deficits in different linguistic domains, which can quantitatively mount to deficits in children with developmental language disorder (DLD). However, little is known about the developmental course of spoken language in hard-of-hearing children with forced displacement biography. This longitudinal pilot study investigates German spoken language development in 3 late-successive hard-of-hearing refugee children (ages: 12;2-13;1) and compares them with 3 age-matched hearing children with comparable biography and L1-background and 3 younger children with DLD. Using the German versions of the LITMUS-sentence and quasi-universal nonword-repetition tasks, we investigated phonology and complex morphosyntax. Results show great discrepancies in the trajectories of the hearing and hard-of-hearing refugee children, who quantitatively resembled those with DLD on sentence and nonword-repetition tasks. This demonstrates that hard-of-hearing refugee children experience additional disadvantages due to their variable language experience in relation to their hearing LoE-matched peers and require additional language support.

4 Saturday, November 9th, 2024

Acquiring prosodic cues to word boundaries: Perception and production evidence from Mandarin-speaking preschoolers with cochlear implants.
Feng Xu, Ping Tang, Katherine Demuth and Nan Xu Rattanasone
Previous studies have established that Mandarin-speaking preschoolers with typical hearing (TH) can utilize prosodic cues (duration and pitch) to distinguish compounds (e.g., jellybeans) from lists (e.g., jelly, beans) in both perception and production by age 4. However, preschoolers with cochlear implants (CIs) may face challenges integrating these cues, as CIs do not efficiently encode pitch information. This study examined whether preschoolers with CIs can distinguish compounds from lists in perception (Experiment 1), and whether they can also use these prosodic cues to distinguish them in production (Experiment 2). The results indicated that preschoolers with CIs can identify compounds, and employ longer duration to differentiate compounds from lists; however, they cannot fully utilize pitch cues for disambiguation. These findings suggest that, for preschoolers with CIs, durational cues are more reliably used than pitch cues to meaning.

Blocked vs. interleaved exposure in bilingual children's novel word learning.
Caitlyn Slawny, Emma J. Libersky and Margarita Kaushanskaya
Dual-language exposure varies widely within and across bilingual populations. Children may be exposed to two languages in distinct environments, but they also may hear languages alternate within the same. These natural bilingual environments map onto blocked and interleaved exposure conditions that have been extensively studied in developmental and psycholinguistic literature. However, their effects on bilingual word learning have not yet been examined. In two experiments, we investigated whether blocked (Experiment 1) and interleaved exposure (Experiment 2) to two languages would affect bilingual children's word learning, and if learning would be influenced by language ability. Our findings indicated that Spanish-English bilingual children four- to five-years of age) in both experiments learned novel English and novel Spanish words above chance, with better learning of Spanish novel words in the interleaved vs. the blocked experiment.

Pre-migration adversity and socioemotional wellbeing shape the growth of L2 complex syntax in Syrian refugee children: A longitudinal study.
Hannah B. Lam, Johanne Paradis and Adriana Soto Corominas
Previous cross-sectional studies found that second language acquisition of vocabulary and morphosyntax for refugee children is affected by pre-migration adversity and socioemotional wellbeing. However, little is known about the extent to which adversity and wellbeing affects refugee children's production of complex syntax in narratives with more long-term exposure to the second language environment. This longitudinal study of L1-Arabic, L2-English Syrian refugees aged 6-14 over the course of two to five years used the Test of Narrative Language to measure clausal density and mean length of utterance in words in L2-English. Linear mixed effects regression models implicated the roles of increased L2 exposure, age, socioeconomic status, and nonverbal IQ, while additional model variances were explained by time spent in refugee camps and socioemotional factors like prosocial behaviors and hyperactivity. In conclusion, these results highlight the lingering impact of mental health and trauma specific to refugee populations on their bilingual development.

The influence of phonotactics on morphological decomposition in infancy.
Kevin Liang and Megha Sundara
Recent research (Kim & Sundara, 2021) has shown that English-learning 6-month-olds relate novel words suffixed with -s like babs and teeps that are embedded in passages, with just the stem bab and teep, demonstrating an early sensitivity to morphological relatedness. By 6-months, infants are also becoming sensitive to phonotactics. In Experiment 1, we found that 6-month-old English-learning infants relate nonce forms suffixed with the [z] allomorph, which would be phonotactically ill-formed without a morpheme boundary, but not the [s] allomorph of the English -s suffix. In Experiment 2, we found that 6-month-olds only related nonce forms suffixed with [z] when the resulting stem would be phonotactically legal but not when it would be phonotactically illegal. These results show that morpheme decomposition is not obligatory at 6-months; instead, infants' ability to decompose potentially suffixed words is constrained by their developing knowledge of phonotactic restrictions in English.

Do children use transitional probabilities to learn new words in real life? Evidence from age-of-acquisition trajectories across seven languages.
Sophie Regan and Mahesh Srinivasan
Segmenting words from continuous speech is a fundamental problem for language acquisition. Infants are believed to overcome this problem in part by tracking the transitional probabilities (TPs) between sounds in a language, since TPs between sounds within words tend to be higher than those which span word boundaries. Classic work demonstrates infants can track TPs and use them to distinguish high-probability and low-probability sequences in both artificial and natural languages in lab settings, but additional work is needed to demonstrate that children actually leverage this information to segment and learn words in their daily lives. The present study fills this gap by exploring whether words containing higher-probability transitions between phonemes are acquired earlier than words containing lower-probability transitions, which would be expected if children actually rely on transitional probabilities to segment speech and learn new words.

The role of processing time and accuracy in children's accent-related biases.
Ajna F. Kertesz and Catharine Echols
Both adults and children show accent-related biases typically favoring native speakers over foreign-accented speakers. These biases are sometimes attributed to social group membership-signaling properties of accents. However, another less explored explanation is that the cognitive difficulty of processing accented speech leads to negative affect, which then results in negative social judgments. In our study we examined both processing time and social preference of accented speech in 3–6-year-old children. We used three different accents, American English (US), New Zealand English (NZ), Turkish-accented English (TR), to explore both the native and the familiar properties of accent that may influence processing and social preferences. Preliminary GLMMs (N= 59/80) revealed that faster reaction time and higher accuracy were good predictors of higher social judgments (e.g., nice). These results suggest that processing accented speech is cognitively taxing and this difficulty may partially explain social biases towards accented people.

English vowel perception in Spanish-English bilingual preschoolers: Multiple-talker input is only beneficial for children with high language exposure levels.
Simona Montanari, Jeremy Steffman and Robert Mayr
Despite extensive work on perceptual development in bilingual infants, little is known about speech perception in bilingual preschoolers. This study investigates English vowel perception in Spanish-English bilingual preschoolers. Perception was assessed through a forced-choice minimal-pair identification task in which children heard synthesized stimuli that varied systematically along the /i- / continuum and had to match them with one of two pictures. The results of Bayesian mixed-effects logistic regression analyses revealed that bilinguals produced vowel perception patterns with no credible difference from those of monolinguals. While age did not predict perception, input quantity and diversity jointly interacted to moderate how well bilinguals perceived the /i- / contrast, with diverse input promoting perceptual performance in children with high English exposure and more advanced English language skills, while limiting performance in children with more limited English exposure. This suggests that varied input can be more or less beneficial based on the learner's language learning stage.

Contending with label variation in early word learning.
Kennedy Casey and Casey Lew-Williams
Child-directed speech contains many unique words that are not typically heard in adult-adult conversation, such as tummy, booksie, and diapey. If word learning is conceptualized mainly as a one-to-one mapping problem, then this type of label variation could be viewed as unhelpful noise that obscures the learning signal. However, we present evidence that label variation is a key feature of (North American English) word learning environments and should be incorporated into theories of early word learning. In Study 1, analyses of home recordings of child-caregiver interaction reveal that earlier-learned English words tend to have more label variation. In Study 2, we show that English-hearing toddlers successfully learn novel word-object mappings under not only stable but also variable labeling conditions. Together, our results suggest that label variation does not hinder (and instead seems to support) word learning. Discussion will focus on various competing explanations for this pattern of findings.

Does grammatical gender influence implicit gender attitudes? Evidence from sequential bi/multilingual speakers from Afghanistan.
Ali Shahidy and Usha Lakshmanan (presented remotely)
The current research explores the link between language and cognition, focusing on the impact of grammatical gender on implicit gender-attitudes, an issue not hitherto addressed. Adult Afghans (N=101) comprising native-speakers of Dari (a genderless language; N=59) or Pashto (a grammatical gender language; N=42) completed an on-line background questionnaire, religiosity scale, and the Gender-Career Implicit Association Test (IAT), in their L1. Multiple regression revealed that Model 2, with L1 Gender-type (Pashto=1, Dari=0), improved Model 1 (comprising Age, Sex, and Religiosity). L1 gender-type was the most significant predictor. Contrary to our prediction, speakers of Dari and not of Pashto had significantly higher implicit gender bias. Model 3, adding L2 Genderless-Type (Dari=1, Other=0), improved the model further, with L1 Gender-type as the most and L2 Genderless-Type as the second-most significant predictor. Model 4, adding L2-natural gender-type (English=1, Other=0), slightly reduced the total variance explained. Implications

from a conceptual and methodological perspective are discussed.

Characterizing language learning trajectories with optimal transport.
Nathalie Fernandez, Rose Griffin, Patrick Shafto and Naomi Feldman
Children are often characterized as learning language efficiently from remarkably little data. We formalize the idea of efficient learning using optimal transport, an area of mathematics that formalizes how to efficiently move between probability distributions, through a case study on determiner acquisition. To apply optimal transport to language acquisition, we characterize language as a distribution over linguistic features and measure the child's movement toward the caregiver's distribution. Specifically, we characterize a speaker's determiner production as a multinomial distribution, where its use could take one of three events: omitting the required determiner, producing a definite article (the), or producing an indefinite article (a or an). Contrary to the predictions of previous theories, results showed that the child moved toward the caregiver's distribution, but the trajectory veered strongly in the direction of the indefinite determiner, relative to the parent's distribution, before moving back toward producing the definite determiner.

Children's integration of communal lexicons in communication: Evidence from Hindu and Muslim children in India.
Marina Ortega-Andres, Sophie Regan, Hugh Rabagliati and Mahesh Srinivasan (presented remotely)
To successfully communicate, adults rely on their expectations of interlocutors' linguistic knowledge, which are influenced by their interlocutor's communities and communal lexicons (Clark, 1996). For example, a birdwatcher might use nomenclature like "nuthatch" when conversing with other birdwatchers, but opt for more general terms like "bird" with others. Research finds that children can adapt their word-choices based on their interlocutor's knowledge (O'Neill, 1996), but few studies have investigated whether children integrate knowledge of their interlocutor's communities. We explored this across two studies with Hindu and Muslim children in Gujarat, India, who have distinct communal lexicons (Table 1). We examined children's understanding of these communal lexicons (Study 1) and how they integrate this knowledge in intergroup communication (Study 2). We were particularly interested in potential dominance differences, given that Muslims are a minority in India.

Who's right about whose 'right'? The understanding of perspective-dependent spatial language by older autistic children.
Emily Zane, Anil Ramakrishna, Julia Mertens, Shrikanth Narayanan and Ruth Grossman
The current project tested projective-preposition (e.g., left/right/front/behind) comprehension by 17 autistic and 18 non-autistic teenagers who scored similarly on standardized language and IQ measures. During the task, participants had to accurately interpret prepositional phrases to select a targeted referent. Prepositional phrases randomly alternated from using the participant's frame of reference ('the one on your left') or another person's ('⋯my left'). While all participants performed well on the task (average accuracy rates above 90% in both groups), autistic participants were significantly less successful at identifying the correct shape when preposition phrases used the other person's frame of reference. This finding may reveal subtle difficulties interpreting language that depends on visuospatial-perspective-taking in autism. Such a hypothesis has been offered to explain differences in the development of various language forms in younger autistic children, like first-/second-person pronouns and other deictic forms.

LMs are not good proxies for human language learners.
Sathvik Nair, Katherine Howitt, Allison Dods and Robert Hopkins
We look for a shared underlying representation of diverse surface forms of filler-gap dependencies (FGDs) that could be exploited for learning. We test a large language model (LM), explicitly controlling its input, to uncover whether it posits such a generalization. Recent successes of LMs call into question what aspects of linguistic theory are necessary for acquiring language: they can generate natural language and determine relative acceptability of sentence strings. Some researchers argue these successes replace syntactic theory in explaining how children arrive at a grammar. We show that while LMs have limited success differentiating grammatical from ungrammatical FGDs (Table 1), they rely on specific properties of the input, rather than making a human-like generalization across FGDs. Our work reiterates the importance of constrained hypothesis spaces for acquiring human-like structural generalizations and reflects on the limited potential of

LMs, which lack specific linguistic biases, to model language acquisition.

"Let's call this a dax!" Children and adults consider speaker knowledge when reasoning about novel labels

Khuyen Nha Le and David Barner

Children typically compute a "mutual exclusivity inference" when encountering a new word, excluding known referents to infer the word refers to something unfamiliar. One account suggests children consider speaker knowledge to make these inferences, reasoning that an informative speaker wouldn't use a new word for a known object. Others suggest children make these inferences egocentrically, relying on their own knowledge. Previous research found that children and adults often disregard speaker knowledge when making mutual exclusivity inferences, but may have underestimated epistemic reasoning. In a modified paradigm that made speaker knowledge explicit, adults and older children were more likely to choose randomly between objects when one had an invented label, compared to when its label was taught. Moreover, those believing the speaker knew the label were less likely to choose the labeled object. These findings suggest adults and older children reason about speakers' knowledge beyond their own when considering novel labels.

Incremental processing of spatial prepositions supports predictions of object geometries.

Zoe Ovans, Barbara Landau, Heesu Yun, Sarah Yi and John Trueswell

An extensive literature shows that children use their developing linguistic knowledge to process speech incrementally and predict reference to objects. We extend this to the domain of spatial prepositions: these terms appear early in children's spontaneous speech, yet it can take years to fully grasp their meanings, even for simple spatial terms like "in" and "on." In Experiment 1, we replicate findings of prediction in adults and extend them to 4-year-olds, showing that both groups use 'inside' to predict reference to containers. In Experiment 2, we further ask about the specificity of these predictions. We found that when adults heard basic locative clauses, they looked to images depicting canonical spatial relationships, but when given additional nonce verbs, they looked to images depicting less-canonical relations. Together, these findings show that adults and children use spatial prepositions to restrict reference, looking predictively to objects that afford specific geometric properties in real time.

The challenge of phonological variation in infant-directed speech for models of statistical word segmentation.

Caroline Beech and Daniel Swingley

Words are not always pronounced the same way, even by a single talker. Statistical models of infant word segmentation normally ignore this variation. How costly is this oversight? Testing on adult-adult conversation (Buckeye Corpus) showed that variability hurts model performance significantly, and causes serious problems for lexicon building, because phonological variants overlap enormously with separate, similar-sounding words (Beech & Swingley, 2023). Here we find that infant-directed speech (IDS) does not mitigate these problems. IDS (Brent Corpus) and ADS (Buckeye) showed a similar decrease in segmentation performance moving from dictionary pronunciations to actual, transcribed pronunciations. Additionally, network analysis of IDS revealed similar levels of entanglement between segmented forms and lexical items, with 50% of segmented forms trapped in a dense web of phonological and lexical overlaps where phonological identities/differences were not consistent cues to word identity. The results raise doubts about prior optimism concerning the utility of statistical segmentation heuristics.

4- and 5-year-olds integrate verb knowledge with situation models in online reference resolution.

Yukun Yu, Amanda Rose Yuile, Damian Ishak and Cynthia Fisher

Children and adults use multiple information sources to anticipate referents in language comprehension, including lexical semantics and event-specific situation models. Adults also integrate verb meanings with situation models (Chambers & San Juan, 2008): For example, they anticipated previously-moved objects upon hearing "return". Building on this work, we asked whether children integrate verb meanings with situation models to generate referential predictions. In a visual-world task, 4- and 5-year-olds viewed images and listened to stories describing transfer events. The critical sentences contained "give back" or "give", which impose differing constraints on possible recipients: "give back", but not "give", implies a previous

owner of the object. Children looked more toward the previous owner when hearing "give back" compared to "give", indicating they integrated the presuppositions of "give back" with their knowledge of the story. Thus, during online comprehension, children selectively deploy event-specific situation knowledge, based on verb semantics, to anticipate upcoming referents.

The role of spatial layout and language in infants' categorization of places.
Yi Lin, Agata Bochynska, Daniel D. Dilks and Moira R. Dillon
Infants engage with objects early and frequently hear them labeled, but infants do not independently navigate places until later and rarely hear place nouns. Do 6- and 12-month-old infants nevertheless use shape and language to categorize places like they do to categorize objects? Across six preregistered experiments, 164 full-term English-learning infants participated in a novelty-preference looking-time paradigm. Experiments 1–3 showed that 6-month-olds could categorize dynamic scenes with open spatial layouts versus closed spatial layouts, even when the scenes were grid-scrambled, but not when there was no accompanying labeling language. 12-month-olds in Experiments 4–6, by contrast, could categorize scenes under all of these conditions. While language supports early place categorization, this changes by the end of the first year of life, and category-specific shape information, like a place's spatial layout, is not required. The present work expands our understanding of infants' intuitions about space and language across domains.

Bilingualism effects in expressive vocabulary development in Autism Spectrum Disorder: Evidence from longitudinal data.
Eleni Peristeri, Ioannis Vogindroukas and Ianthi Maria Tsimpli (presented remotely)
One aspect of language which has been little researched in autistic children concerns vocabulary development. Cross-sectional research found that autistic children's lexical errors may be traced to weak central coherence that enhances attention to detail. Evidence has shown that bilingualism mitigates autistic children's detail-focused processing style. Here, we focus on bilingual and monolingual autistic children's longitudinal picture-naming performance, and a classification of lexical errors in terms of semantic and visual criteria, to test whether monolingual and bilingual autistic children follow diverging developmental trajectories of expressive vocabulary. According to the findings, expressive vocabulary growth patterns showed a delay for bilingual (vs. monolingual) children at younger ages (ages 8 and 10), followed by a sudden "catch-up" burst at the age of 12. Bilinguals produced fewer visual and detail-focused naming errors than monolinguals, implying that bilingualism may work as a protective factor against autistic children's weak central coherence and low-level visual processing style.

Tense morphology can guide real-time interpretation of novel verbs in young children.
Leticia Schiavon Kolberg, Mayara de Sa Pinto, Giulio Massari, Clara Dargent, Anne Caroline Fievet and Alex de Carvalho
This study investigated children's use of present and future tense morphology to guide verb learning. French-learning 3-to-4-year-olds listened to novel verbs presented in either the present (e.g. "the girl is raning!") or future tense (e.g. "the girl will rane!"), while watching a video displaying two characters side-by-side: one performing an ongoing novel action, and another performing a future novel action. Afterwards, participants saw images representing different characters performing these actions, and were asked to choose another instance of the novel event. Eye-movements revealed that children in the present tense condition looked significantly more at the ongoing novel action than children in the future condition. Pointing data showed that participants successfully extended the meaning of the novel verb to a different instance of the novel action. These findings indicate that young children can employ verb tense morphology in real-time to infer temporal aspects of verb meanings.

Testing error-driven learning accounts for the dative alternation in native speakers and learners of Mandarin.
Yanxin (Alice) Zhu and Theres Grüter
This study examines error-driven learning (EDL) accounts for the dative alternation in native speakers (L1ers) and classroom learners (CLs) of Mandarin. We ask whether Mandarin users predict upcoming dative constructions based on verb constraints (RQ1), and adjust their real-time prediction (RQ2a) and production (RQ2b) when only primed with DO datives despite a strong general PO bias for the Mandarin

dative alternation. Participants completed a standard visual world eye tracking (VWP) task to examine RQ1, followed by a visual-world + structural priming task (VWSP) to examine RQ2a. They also completed sentence completion tasks one day before and after VWSP to examine RQ2b. Results from VWP support the key underlying assumption of EDL for the dative alternation—active prediction based on verb constraints, among both L1ers and CLs. In VWSP, however, we observed no robust effects or adaptation of prediction in real-time, yet both groups showed longer-term adaptation in production.

Are characteristics of late talker vocabularies unique to spoken languages?.
Elana Pontecorvo, Amelia A. Becker, Amy Lieberman, Jennie Pyers and Naomi Caselli
Research on "late talkers," children under two with small productive vocabularies in the absence of other delays, has exclusively focused on children learning a spoken language, so little is known about deaf children with early sign language exposure who nevertheless have small early vocabularies (called here "late signers"). We asked whether late signers' (N=46) sensitivity to lexical properties differed from younger, vocabulary-size matched participants. A mixed-effects logistic regressions predicting sign acquisition showed significant interactions between group and frequency, as well as group and iconicity, such that the positive effect of each was weaker for those in the "Late Signer" group. These results suggest that the mechanisms of vocabulary acquisition are different for signers with late emerging vocabularies than those with earlier emerging vocabularies indicating that the cognitive underpinnings of late talking are not specific to the spoken modality.

Environmental context scaffolds children's semantic representations of novel words.
Elise Breitfeld and Jenny Saffran
Young children rapidly acquire rich semantic knowledge about nouns—what category they belong to, what actions they are associated with, etc. This study explores whether the environmental context in which children encounter novel objects and their labels might influence how children ascribe meaning to novel nouns. Children (36-48 months) were taught labels for novel objects presented in natural scenes (kitchen or outdoor). They were then tested on their semantic representation of each of these novel labels using a verb-mediated prediction task in a looking-while-listening paradigm. Specifically, we examined whether children predicted which target referent would be named after hearing a context-relevant verb (i.e., "eat" for kitchen objects and "throw" for outdoor objects), but prior to hearing the actual label. Results showed that children did make these predictions, suggesting that they encoded environmental context information during word learning and used it to inform their understanding of novel word meanings.

Interfaces in ambiguity resolution of wh-elements by L1-Russian L2-Chinese speakers: A case study of na-construction
Xin Yan and Shanshan Yan
This study examines how adult native Russian speakers learning Chinese resolve ambiguities in Chinese wh-elements, focusing on the prosody-semantics and syntax-semantics interfaces. Chinese wh-elements can be ambiguous between interrogative and existential readings, resolved by prosodic contours and syntactic positioning. In Russian, such elements are unambiguously interrogative. The study involved 28 learners (divided by proficiency) and 31 native speakers, using acceptability judgment and listening comprehension tasks. Results indicate that learners continue to face challenges with syntactic cues up to the advanced stage, while prosodic cues are acquired earlier. Persistent differences with native speakers are likely due to the complex lexical mapping between L1 and L2.

A 5-Year Longitudinal Study of Bilinguals' Vocabulary Growth and the Role of the Pre-kindergarten Home Language and Literacy Environments.
Johana Chaparro Moreno
This study examined the development of English vocabulary among Spanish-speaking dual language learners (DLLs) from pre-kindergarten (pre-K) to 3rd grade and the influence of the pre-K home language and literacy environments. Participants were 285 DLLs –96% Hispanic and 46% female–living in the U.S. The major gains and individual differences in English vocabulary occurred from pre-K to kindergarten. Caregivers' English proficiency and DLLs' amount of language use were significant predictors, and the link between the latter and DLLs' English vocabulary was in general not linear. In a language-use continuum from only Spanish to mostly English, the major change occurred between mostly Spanish and Spanish and English

equal amounts. Home literacy variables were not significant predictors, yet the Spanish and English equal amounts group tended to live in households with relatively more literacy practices and resources and had caregivers with more English proficiency.

Word order, morphological typology, and method predict the size of the noun bias: A meta-analysis.

Yiqun Zhang, Marisa Casillas and Subin Kim

Across diverse language settings, concrete nouns predominate in children's early vocabularies, known as the "noun bias," attributed to a conceptual advantage for concrete objects (Gentner, 1982). While many studies report a noun bias, some find no bias or even a verb bias, with significant variation between languages. Methodological approaches also affect the size of the bias. This meta-analysis synthesizes evidence from 96 empirical papers spanning 28 languages over 50 years. We examined the effect size of the noun bias, considering factors like basic word order and morphosyntactic type. Results show that method and morphology are key predictors of the bias size, with observational studies showing less noun bias compared to checklist studies. Languages with verb-initial word order and analytic typology display greater noun bias. These findings highlight the complex interplay of linguistic context and method, emphasizing the need for diverse developmental data to better understand vocabulary development.

Bilingualism, Working Memory, and Relative Clause Comprehension in Children.

Ehsan Solaimani, Vicky Chondrogianni, Anamaria Bentea, Hélène Delage, Pauline Wolfer, Franziska Baumeister and Stephanie Durrleman (presented remotely)

This study explores how working memory (WM) impacts comprehension of subject (SRCs) and object relative clauses (ORCs) in monolingual and bilingual children. By comparing French and German, we test two accounts: hierarchical intervention, predicting different WM costs for SRCs and ORCs across languages, and linear distance, predicting cross-linguistic asymmetries. We administered a character-selection task to 3-to-11-year-olds, assessing RC comprehension and WM via non-word repetition. Results showed higher accuracy for SRCs in both languages, but only French showed significant WM effects. No WM effects were observed in German, suggesting that case-marking may alleviate reliance on WM. Bilingual children in French used WM more efficiently, enhancing comprehension of both RC types. This indicates that bilingualism might improve WM utilization in language tasks. We argue that neither hierarchical nor linear account fully captures the patterns with WM. Results underscore the importance of cross-linguistic research to understand the interplay between bilingualism, WM, and syntax.

Having, accessing, and uptaking for syntactic representation: Structural priming in diverse child populations.

Jiuzhou Hao, Patrick Sturt, Jason Rothman and Vicky Chondrogianni

The present study adopted the structural priming paradigm to examine the existence, accessibility and uptake of syntactic representations (of three Mandarin non-canonical structures) in Mandarin-speaking monolingual children with and without Developmental Language Disorder (Mono-TD and Mono-DLD) and Mandarin-English child heritage speakers with typical development (CHS-TD). Mono-DLD has reduced uptake while CHS-TD has reduced input quantity. Mono-DLD and TD bilingual children sometimes show surface overlap. Priming allows us to examine if the similarities are at the level of representation (the existence of priming) or performance (the magnitude of priming) and if reduced input leads to reduced uptake (cumulative priming). The results showed that priming surfaced in all groups but was smaller in Mono-DLD and cumulative priming was found in both TD groups but not Mono-DLD. These suggest that all groups had the syntactic representations which Mono-DLD had more difficulties accessing and uptaking. Reduced input does not necessarily lead to reduced uptake.

Tseltal children show a verb bias in early vocabulary development.

Marisa Casillas, Ruthe Foushee and Kennedy Casey

It is well-documented across various languages that children acquire nouns more easily and earlier than other types of words, a phenomenon known as the noun bias. However, in Tseltal, the structural features of the language, as well as child–caregiver interactional patterns, dampen the salience of nouns and heighten the salience of verbs. This leads us to predict a diminished noun bias and a predominance of verbs in Tseltal

children's early vocabularies. To test this hypothesis, we developed a Tseltal vocabulary checklist containing 262 items and conducted expressive vocabulary interviews with 78 parents of Tseltal-acquiring children aged 9–23 months. The results indicated an absence of noun bias and revealed a clear verb bias in Tseltal children's spontaneous speech. Adjectives and closed-class words showed the common under-representation pattern. Echoing past cross-cultural research in this domain, our findings suggest that early lexical development is influenced by linguistic and cultural factors.

Noun phrase type and information status in relative clause processing.
Silke Brandt, Anna Theakston and Jacky Chan
We conducted an eye-tracking study with a picture-selection task with English-speaking monolingual 3-year-olds (N = 48), 5-year-olds (N = 48), and adult controls (N = 48). Participants heard a subject or object relative clause (SRC/ORC). The embedded NP was either expressed by a pronoun or lexical NP (SRC: Where is the chicken that is kissing THE MOUSE/HIM; ORC: Where is the chicken that THE MOUSE/HE is kissing). In addition, the embedded NP was either discourse-given or new. Accuracy and response-time data suggest that ORCs were generally more difficult to process than SRCs. The processing asymmetry increased when the embedded NP was expressed by a pronoun. Information status of the embedded NP was not a significant main factor. However, response-time data for the 5-year-olds and adults indicate that when pronouns referred to discourse-given referents, processing became easier. As children get older, they become sensitive to links between discourse-level and lexical cues.

4.1 Plenary Address

A Lifespan Perspective on Heritage Language Development
Dr. Silvina Montrul
A heritage language is a socio-politically minority and/or minoritized language acquired as a first or one of the first languages in a bilingual or multilingual context. When heritage speakers acquire their native language under conditions of reduced exposure and use during late childhood and adolescence, very often their heritage language does not fully develop; it displays reduced vocabulary and structural differences and variability at all levels of linguistic analysis that arise from the complex interaction between the nature and quantity of input and the age of bilinguals. In the last two decades, and with the growing realization that our theoretical models must make room for variation in language experiences and different types of speakers, the acquisition of heritage languages has grown into an important subfield in linguistics, language development and applied linguistics. In this talk, I will refer to recent experimental results from behavioral studies of different languages to show how the development of heritage languages 1) sheds light on critical differences between first and second language acquisition and the notion of a native speaker, 2) elucidates the nature of language loss as a function of age, and 3) provides insights on the extent to which a native language that was not fully acquired in childhood can be regained later in life. The relevance and implications of the study of heritage languages for heritage speakers and their families, for bilingualism and society, and for the language and cognitive sciences will be discussed.

5 Saturday Posters (Session II)

Presenting the Tool for Assessing Intergenerational Transmission (TITA) within Endangered Language Communities
Kamil Deen, Anna Belew, Peter Chong, Keiko Hata, Kavon Hooshiar, Ryan Henke, Grant Muagututi'a, Anongnard Nusartlert, Anupama Reddy, Jennifer Sou and Sarah Uno
We present results from a seven-year project on the development of TITA: The Tool for Intergenerational Transmission Assessment, which provides field-workers/researchers a six-instrument suite that assesses intergenerational transmission (IGT) of a language suspected of losing vitality. TITA is easily implementable and based upon recognized techniques within the field of language acquisition. We present the results from two field studies (Study 1: Kosrae, Federated States of Micronesia; Study 2: Isaan, Northeastern Thailand) showing that in Kosrae, TITA assuages community concerns about language loss, while in Isaan, TITA

discovers alarming loss of IGT. We also present results of statistical validation of the TITA instruments.

Developing a matched Communicative Development Inventory (CDI) across three languages: English-Spanish-Mandarin (ESM)
Kristy Lai, Huanhuan Shi, Lillian Masek and Catherine S. Tamis-LeMonda
The large number of dual-language-learning (DLLs) children calls for effective vocabulary assessment tools for bilingual children. The MacArthur-Bates Communicative Development Inventories (CDIs) are widely used caregiver-report tools for assessing infant/toddler vocabulary development, available in multiple languages. However, since the original CDIs were created and standardized using monolingual samples, with separate word lists for each language, they do not consist of fully matched cross-language translation equivalents. Researchers typically administer multiple CDI forms separately, which can over/underestimate vocabulary and are unduly time burdens on caregivers. Thus, we built upon the DLL English-Spanish (DLL-ES) Inventories (Tamis-LeMonda et al., 2024) to develop a fully matched form across the top three languages spoken in NYC, English, Spanish, and Mandarin—the DLL-ESM. We will discuss the challenges, decisions made, and lessons learned through the process of developing the DLL-ESM as well as how this method can be adapted for developing inventories for different bilingual populations.

Difficulties identifying Specific Reading Disabilities in young children in the multilingual context of rural Zambia
Jodi Reich, Mei Tan and Elena L. Grigorenko
We report on challenges of characterizing specific reading disability (SRD) in rural Zambia and aim to determine whether typical SRD identification methods can be applied successfully. We include analysis and discussion of linguistic, educational, and other relevant factors. The children in this study use Chitonga (Bantu) at home but are predominately educated in English. Literacy education switched: Chitonga (grade 1), English (grade 2), bilingual curriculum (grade 3 on). Differences in orthographic transparency and spoken language characteristics could impact literacy skill transfer from one language to the other. Using low achievement and IQ-discrepant reading performance criteria, we identified 109 +SRD children, grades 3-5 (prevalence = 5% sample = 2,041 children). Group performance on academic achievement and memory skills were low, although within one standard deviation of the sample mean and consistent with SRD. We present the selection process results, reading-related and cognitive skill performance, and a discussion of literacy skill development.

The memory-language interface beyond a grammar-lexicon divide: No effect of procedural memory in children's production of case marking
Iris Nowenstein and Sigríður Sigurjónsdóttir
Within the rapidly growing literature on the memory-language interface, various key findings remain actively debated. This includes the procedural-declarative dichotomy in memory and its association with a grammar-lexicon divide both in typical language development and developmental language disorders (e.g. Ullman et al. 2020; Goffman & Gerken 2020). Following Divjak et al. (2022), we argue that typologically diverse work on more fine-grained language outcomes than vocabulary and grammar is crucial in order to uncover the underspecified mappings between language and memory structures. We therefore present data on the relationship between memory capacity and Icelandic case marking: A morphosyntactic variable straddling the grammar-lexicon divide, as it depends on structural factors as well as being conditioned by lexical semantics. Contrary to our predictions based on previous work, the results reveal an effect of short-term verbal memory, but not procedural memory, on the production of case marking in typically developing Icelandic-speaking children.

Cue Strength in Predictive Processing in Child Turkish Heritage Speakers: Case vs. Prosody
Selim Tiryakiol, Leyla Zidani-Eroglu, Fatih Bayram and Jiuzhou Hao
This study investigates how Turkish child heritage speakers (CHSs) in Norway interpret verb-medial sentences using prosodic and accusative case marking cues through the visual world eye-tracking paradigm (VWP). While syntax, case morphology, animacy, agreement, and prosody play roles in predictive processing, their strength varies across languages. Previous research has focused on word order and accusative case marking. This study expands the scope to include scrambled sentences and prosodic manipulation. Twelve

CHSs (mean age 10.4) were tested using Gorilla, an online experiment platform. Findings indicate that CHSs wait for the verb to interpret argument structure and use a subject-first strategy without overt cues, differing from monolingual Turkish children. In conditions with overt case marking, they interpret sentences post-verbally and immediately after the first NP in NPacc-V-NP and NP-V-NPacc conditions, respectively. Prosodic cues show mixed results, with participants favoring SVO interpretation, highlighting the complexity of prosody processing among heritage speakers.

The mouse is pulling the hedgehog. Or the other way around? Non-canonical word order comprehension in Czech and German four-year-olds
Jolana Treichelová, Anna Chromá, Filip Smolík and Claudia Friedrich
The prior studies presenting differences in non-canonical word-order processing in Czech- and German-learing peers were not directly comparable. We present a design for a direct comparison. Sentences with the same pattern of case ambiguity and word order were constructed in Czech and German to describe identical set of pictures. While looking at two complementary pictures with reversed agent- and patient-role assignment and listening to one sentence describing one of the pictures, children's gaze was tracked, and children were asked to point to the correct picture. Mixed-effect models were fitted on the data: logit models of SVO-pointing, and linear models of SVO-looking proportion. In both the measures, Czech-learning children put strikingly less emphasis on the cue of word order then their German-learning peers. Both, structural dissimilarity (Czech suffixes vs German prenominal articles), and dissimilarities in the distribution of morphologically un/ambiguous subjects and objects might play a role in an explanation.

Bilingual input separation of rhythmically similar languages: vowel, consonant, and phonotactic cues
Frans Adriaans
Bilingual infants need to develop ways to distinguish two different languages in the input speech stream. Studies on language discrimination have suggested that rhythm plays a crucial role in this process, but it remains unclear how languages that are rhythmically similar could be separated. One potential cue is segmental information. However, little is known regarding the effectiveness of segmental information for input separation. The current study uses computational modeling to assess how different types of segmental information (vowels, consonants, phonotactics) could be used as a cue for separation of English and Dutch input. The effectiveness of these cues is tested using different degrees of input mixing. The results show that vowels are more effective than consonants. In addition, while vowels are likely the earliest segmental cue available, additional information regarding consonants and phonotactics could potentially be used for further enhancement of the infant's input separation capabilities.

Revisiting (Im)possible Interactions in Learning Turkish Laryngeal Alternations
Caleb Belth
Prior research has demonstrated that in corpus data, Turkish laryngeal alternations (in which voiceless final stops alternate with voiced stops in some nouns but not others), is predictable from a number of features of the stem. However, wug tests have suggested that Turkish speakers generalize the alternation based on some but not all of those features—specifically appearing to not use vowel quality as a predictor, an interaction that is rare or unattested typologically. This has led some to conclude that Universal Grammar specifies (im)possible interactions. We propose a learning based account of this alternation that accounts for wug test behavior without requiring an analytic bias to rule out dependencies: the apparent lack of sensitivity to the vowel quality dependency follows from the learning algorithm. The resulting model achieves slightly higher correlation than that of a regression model that rules out the possibility of vowel quality influencing the alternation.

Discovering Phonological Representations: The Case of French Liaison
Annika Heuser and Charles Yang
In the acquisition of French, 20-month olds segment the liaison consonant (LC) as the onset of the second word; vowel-initial segmentation only emerges by 24 months. Children thus appear to start by assuming the underlying representation of words is identical to the surface form, only to revise this hypothesis later. We propose that children do so by the Tolerance Principle. LC-onsets create redundant lexical entries for

the same lemma: for example, 'ami' (friend) is burdened by [zami] following 'les', [nami] following 'un', [tami] following 'grand'. Using sampling to approximate children's lexical growth, we show that children know about 150 content words, the LC-induced redundant entries will cause the initial hypothesis to have more exceptions than tolerable by the TP, thereby triggering the learner to seek alternative formulations of underlying representations.

Double the language, double the show: Effect of speaker proficiency and elicitation context on speech and gesture production of bilinguals

Armita Ghobadi and Seyda Ozcaliskan

Gestures and speech form a tightly integrated system in the first language (L1) production. However, how this link functions in a second language (L2) remains unclear, with existing studies (mostly on narrative tasks) offering inconclusive results. This study explores how proficiency and task type influence bilinguals' L2 gesture-speech production. Focusing on Persian (L1)-English (L2) bilinguals with varying proficiency levels, we analyzed their speech and gesture production across narrative and explanation tasks and compared them to monolingual English speakers. We hypothesize that speech and gesture might either align (more speech, more gestures) or compensate (less speech, more gestures). Preliminary findings suggest bilinguals with low proficiency produce simpler speech but use more gestures, particularly during explanation tasks. This research highlights the complex interplay of factors shaping bilingual communication.

Project GeLaTO: Gender Learning and Trust in Others

Diqi Zeng, Benjamin Munson and Melissa Koenig

Young children actively classify themselves and others by gender, influencing their selective trust in learning and speech patterns. This study investigates how children develop beliefs about gendered speech and how it shapes their trust in adults, expanding on prior work by including gender non-conforming (GNC) informants. Preliminary data from 7- to 9-year-old children suggests that they preferred to seek help from cisgender adults of their own sex, with GNC individuals intermediate. Knowledge provided by cisgender females were favorably endorsed by AFAB and AMAB children, while knowledge from cisgender males were more likely to be endorsed by AMAB children. The study demonstrates that children's selective trust is affected by gendered linguistic input, with implications for research on how they learn gendered speech patterns. Including GNC informants allows for generalizations beyond the gender binary, supporting recognition of gender diversity and revealing how children form stereotypical gender beliefs through speech.

I'm convinced! The role of content and manner of delivery in convincing peers in autistic and non-autistic adolescents' persuasive discourse

Jovia Hin Lam Wong, Myriam L. H. Beauchamp, Gigi Luk, Elizabeth Allyn Smith, Kristine H. Onishi, Ana Paquin Domingues and Aparna Nadig

Prior work found that autistic adolescents' persuasive discourse contain fewer supporting arguments and counterarguments than neurotypicals (i.e., content is affected). Yet, how persuasive discourse is perceived depends on both its content and manner of delivery: neurotypical raters had negative first impressions of autistic speakers based on audiovisual clips, but not based on transcripts alone. We investigated how content and manner of delivery compare in predicting convincingness, and whether this relationship differed for 27 autistic and non-autistic adolescents who provided a persuasive argument. Content was analyzed using the Persuasive Scoring Scheme. To assess manner of delivery, a listener rated the speaker's confidence, body language, and tone of voice. Another listener rated how convinced they were. Ordinal regressions found a strong positive relationship between manner of delivery (but not content) and convincingness for non-autistic adolescents. For autistic adolescents, manner of delivery scores were unrelated to how convinced the listener was.

Reciprocal Longitudinal Effects of Vocabulary Knowledge on Emotion Regulation in Low-Income Children from the Early Head Start Research and Evaluation Project

Elizabeth S. Che, Julia R. Moses, Nicole Zapparrata and Patricia J. Brooks

This study examined longitudinal and reciprocal relations between vocabulary knowledge and emotion regulation from infancy to early childhood using data from the Early Head Start Research and Evaluation Study. The sample comprised young children growing up in low-income families in the U.S. (N = 940), with measures of vocabulary knowledge and emotion regulation at 14, 24, 36 months, and 4 years. The sample as

a whole showed considerable delays in vocabulary development, indicated by low scores on a norm-referenced test (Peabody Picture Vocabulary Test). Structural equation modeling established significant concurrent and longitudinal relations between vocabulary knowledge and emotion regulation from 14 months to 4 years. The findings align with constructivist theories emphasizing the role of language in socio-cognitive development. Children growing up in poverty may experience delays in language development with cascading effects on emotion regulation. Conversely, difficulties in emotion regulation may affect language development in early childhood.

Generalization of verb lexicalization biases reveals cross-domain event primitives crosslinguistically

Sarah Hye-yeon Lee and Anna Papafragou

Languages vary in the components of a spontaneous-motion event they lexicalize in verbs (English: manner ("He ran⋯"); Spanish: path ("Él entró⋯")). These verb lexicalization biases affect acquisition of novel motion verbs cross-linguistically. Here we probe the flexibility of these biases, and the nature of the underlying semantic primitives that allow different lexicalizations of event concepts. We take the manner-path distinction in the spontaneous-motion domain to be semantically similar to the means-result distinction in the caused-motion domain (Rappaport-Hovav & Levin, 2010) (e.g., a girl kicking a ball into a bucket; kicking=means, sending-into-a-bucket=result). We find that regardless of native language, learners can (a) flexibly adopt new verb lexicalization biases and generalize them to novel instances within a motion domain, and (b) transfer these newly learned biases across different motion domains. This suggests that these biases are organized around event-general conceptual categories that both structure the verb lexicon and guide verb learning.

Sense to Learn: Object sensory properties affect children's word knowledge and processing

Philip Robert Curtis, Amanda Seidl and Arielle Borovsky

Research in children has demonstrated that lexical acquisition and processing are influenced by objects' sensory properties, and that words for objects with properties from multiple sensory modalities are acquired earlier in development (Seidl et al., 2024). The current study explored whether the sensory modalities of audition, touch, and olfaction influence children's lexical acquisition and processing. Caregivers completed the MacArthur-Bates Communicative Development Inventory. Children were significantly more likely to produce words with greater auditory, haptic, and olfactory properties. Children completed an eye tracking task in which they saw objects with either auditory, haptic, or olfactory features in an overlapping sense condition, and a non-overlapping condition. Results revealed that sensory overlap significantly impacted children's lexical processing, suggesting that children activate these sensory properties during language comprehension. These results demonstrate that the sensory properties of objects impact both children's acquisition and processing of the labels for those objects.

Cognates in noun production and comprehension: an analysis of the performance of monolingual and bilingual children

Alicja Jeleń, Zofia Kordas, Martyna Burdach, Ayla Fjeld Skorpen, Nina Gram Garmann, Ewa Haman, Anna Sara Hexeberg Romøren, Jolanta Kilanowska, Karolina Krupa-Gawel, Magdalena Krysztofiak, Mari Sandbakken and Magdalena Łuniewska-Etenkowska

Cognates are words that have the same meaning in two different languages and have a similar spelling and/or phonological form, for example, flaga (PL) and flagg (NO). Research on bilingualism suggests that cognates are processed faster and more accurately than non-cognates, a so-called "cognate facilitation effect". Here, we aimed to test this effect in Polish-Norwegian bilingual children in both dominant (Polish, L1) and non-dominant (Norwegian, L2) languages. We re-analyzed the accuracy of bilinguals (n = 60, 3 to 6 years old) and age- and gender-matched Polish (n = 60) and Norwegian (n = 60) monolinguals on noun production and comprehension tasks (CLTs). Preliminary analyses for Polish show no significant difference between processing cognates and non-cognates, and our next steps will include an analysis of Norwegian CLT scores.

The effect of double and triple cognates on trilingual children's lexical development

Erin N. Quirk, Miranda Gómez Díaz, Ruth Kircher and Krista Byers-Heinlein

Trilinguals may leverage cognates across not only two but three languages in word learning and compre-

hension. In this study, we investigated these effects in 14 preschool-aged children acquiring two societal languages –French and English –and either Spanish or another heritage language in Montreal, Canada. Children's knowledge of three types of words –noncognates, double (French-English), and triple (French-English-Spanish) –cognates was investigated using parent report and a looking-while-listening task. Both measures indicated better knowledge of triple and double cognates than noncognates, although the difference missed significance in looking-while-listening (p=.11). These measures also showed a slight advantage for triple over double-cognates, which were non-significant at this sample size. Findings will be discussed in terms of both contributions to our understanding of the trilingual lexicon and potential applications to support for trilingual children.

The relationship between lexical, morphological and syntactic acquisition in English and Estonian

Virve-Anneli Vihman, Caroline Rowland, Seamus Donnelly, Piia Taremaa, Adele Vaks, Ada Urm, Izabela Jordanoska, Anastasia Chuprina and Tiia Tulviste

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 (e.g. Bates & Goodman 1997), 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. We use data from several time points and a statistical method robust to non-linear mappings. We additionally apply the analysis to two languages with contrasting morphological systems, to investigate typological differences in the relationship between the domains. Across three studies, we found evidence in both languages that, despite a strong relationship between knowledge of vocabulary, morphology and syntax in early development, these three domains involve separable, overlapping cognitive processes.

Inflectional morphology in Turkish heritage speakers and Turkish-American returnees

Aylin Coskun Kunduz and Silvina Montrul

How flexible are grammars after puberty? To answer this, we test returnees: heritage speakers (HS) born in an immigration context who returned to their homeland in later years. If returnees are target-like, then language is still nimble post-puberty; in contrast, if maturational effects are in play, post-puberty returnees would show variability. Thirty-two Turkish-American returnees, 30 Turkish HS in the US and 30 monolinguals completed an Acceptability Judgement Task, a picture description task and a story-telling task on two vulnerable structures in Turkish HS: DOM and evidentiality. Results showed that i) returnees mostly patterned with monolinguals who significantly outperformed HS, and ii) correlations between accuracy, age of return to Turkey and length of residence in Turkey of returnees were not significant. This suggests that inflectional morphology is still malleable post-puberty. These findings provide a unique angle on the roles of age and input factors in bilingual language acquisition and maintenance.

Preferred word formation strategies in L2 English

F. Nihan Ketrez

Through a pseudoword production experiment, this study investigates whether adult L2 speakers of English have the awareness of word formation preferences in their L1 and L2. Beginner and advanced level L1 Turkish-L2 English speakers as well as L1 English speakers participate in the study. The results suggest that even at the advanced level, L2 speakers of English do not have the awareness of preferred word formation strategies in their L2. They prefer derivation over compounding both in L1 and L2 unlike the L1 speakers of English who prefer compounding. Differences between the two levels of speakers show that the patterns observed in L1 acquisition that favors compounding over derivation is evident in L2 grammar as well.

Acoustic peripherality and word type but not cross-linguistic similarity predict L2 vowel discrimination accuracy

Juli Cebrian

A number of factors explain adult second or foreign language (L2) learners' difficulty to perceive and produce target language phones accurately. This paper focuses on linguistic factors and examines the effects of cross-linguistic perceived similarity and acoustic vowel peripherality on the discrimination of L2 vowel

contrasts, comparing the predictions of the Perceptual Assimilation Model-L2 and the Natural Referent Vowel (NRV) framework. The study also explores the role of lexical status (real vs. nonsense words) in L2 perception. Forty-four Catalan learners of English performed a cross-language mapping task and two L2 vowel discrimination tasks, involving real and nonword stimuli. The results indicated that perceptual asymmetries emerged generally in accordance with the predictions of the NRV but discrimination accuracy was not always explained by crosslinguistic mapping relations. Finally, the results support the role of lexical representations in L2 perception, as discrimination in real words was more accurate than in nonwords.

Feature fission as a mechanism of redeployment beyond fusion: High vowel perception in L2
Xuanda Chen, Heather Goad and Meghan Clayards
Feature-based approaches to L2 speech perception focus on listeners' ability to perceive novel speech sounds when the features required are contrastively present or absent from their native grammar. The Feature Redeployment Hypothesis posits that successful acquisition requires the feature necessary for building novel sounds to be contrastive in the L1 (fusion). We propose that features can also detach from their host segment to build sounds (fission). We test high vowel perception in Mandarin and Italian listeners: Mandarin /u/ is overspecified as [dorsal, labial], while Italian /u/ is [labial] only. Thus, [labial] can detach from /u/ to facilitate perception of [ ] for Mandarin listeners but not for Italians; but [coronal] and [labial] can recombine to build [y] for Italians. An AX discrimination task revealed that Mandarin listeners discriminated [ ] better; no difference was found for perceiving [y] between language groups, showing both fusion and fission are available for L2 naïve perception.

Do bilingual 24-month-olds use sentential context to learn novel words in unfamiliar-accented speech?
Deniz Atik, Alexander LaTourrette, Cynthia Blanco and Sandra R. Waxman
Bilingual infants' speech input is often more variable than monolinguals. Here, we ask whether regular exposure to this variability provide 24-month-olds with an advantage when learning words from unfamiliar-accented speakers. For direct comparison, we adopt a paradigm in which monolingual 24-month-olds fail to use the sentential context to identify the referents of novel words in unfamiliar-accented speech (LaTourrette et al., 2024). In this paradigm, 24-month-olds hear novel words from unfamiliar-accented speakers in informative ("The blick is dancing") or neutral sentential contexts ("The blick is right here"). Preliminary results support our prediction. Monolinguals and bilinguals perform comparably for neutral sentences, but bilinguals show greater preference for the target than monolinguals after hearing informative sentences. That is, bilinguals outperform their monolingual peers when using surrounding words to identify the referents of novel words in unfamiliar-accented speech, suggesting bilinguals may have an advantage over monolinguals that enables more sophisticated inferences from unfamiliar-accented speech.

Linking Prediction and Language Learning in Children: A Case of Verb Bias
Yi-Lun Weng, Amanda Owen Van Horne and Zhenghan Qi
The prediction-based learning account for language development has been supported by computational modeling work (Dell & Chang, 2014; Elman, 1993). Even young children can make linguistic predictions based on limited knowledge (Prescott et al., 2022). However, the exact role of prediction in child language development remains unclear. Therefore, the present study used a visual world paradigm and eye-tracking technique to understand whether (1) children generate predictions as they form new verb biases, (2) discrepancies between prior knowledge and perceived input improve verb bias learning performance, and (3) whether linguistic prediction, at the individual level, supports both language processing and learning. Our results suggest a reciprocal relationship between learning and prediction, that is, learning generates prediction and prediction motivates learning. Importantly, prediction errors, operationalized by the degree of divergence of children's initial verb bias knowledge from the training type, were found to be significantly associated with their learning outcomes.

Lexical access during naturalistic listening in middle childhood and early adolescence
Briony Waite, Tatyana Levari, Anthony Yacovone and Jesse Snedeker
Lexical access in adults is facilitated by linguistic prediction, however, we know less about how predictive ability changes over the school years. To fill this gap, the current study investigates lexical access in 9 and

14-year-old children. Participants listened to a story while continuous EEG was recorded and completed a vocabulary measure (PPVT). We focus on the amplitude of the N400 (a component indexing ease of lexical access), which is highly correlated with word predictability in adults. We find a significant three-way interaction between Cloze, Age Group, and PPVT standard score, such that high-vocabulary 9-year-olds show a stronger effect of Cloze than low-vocabulary 9-year-olds. 14-year-olds do not show this effect. Data collection is ongoing, but preliminary results suggest interesting changes in lexical access during story listening from 9–14. While both ages show a reliance on top-down cues (predictability), vocabulary knowledge seems to modulate reliance on prediction in the younger children.

Children integrate multiple cues across levels of linguistic representations in real-time sentence comprehension

Scarlet Wan Yee Li, Margarethe McDonald and Tania Zamuner

Recent work has found that children can integrate some combinations of linguistic cues during speech comprehension incrementally. However, studies examining how children integrate cues across levels of linguistic representations remain scarce. This study examines how children aged 5-6 years process preceding higher-level semantics and later low-level coarticulatory cues during sentence comprehension using eye-tracking. Participants were tested on sentences that contained a prime (semantically related or semantically unrelated) and a target which had varying coarticulation cues (matching vs. mismatching splicing cues). Analyses looked at the proportion of looking to the target during the prime and target time windows. Preliminary results demonstrate that children are sensitive to both preceding semantic and later coarticulatory cues. Moreover, earlier semantics are maintained over time and influence the processing of later coarticulatory cue. Our findings provide insight on the development of cue integration mechanisms and the timecourse that children update the weighting of different linguistic cues.

Do children know that PolQs are not AltQs? Evidence from Mandarin Chinese

Yixuan Yan and Yitong Luo

English Polar Questions and Alternative Questions are distinguished by intonation while Mandarin chooses a morpho-syntactic way. Previous studies have shown that Mandarin-speaking children started to form PolQs early and productively in their naturalistic speech, preceding AltQs; and they understand declarative huòzhě early at age two. However, it remains to be ascertained when Mandarin-acquiring children begin to distinguish between PolQs and AltQs. Forty-eight Mandarin-speaking children (3;3-6;7, M=4;10) completed a within-subject Question-Statement Task. The children were shown corresponding videos on a screen and then listened to stories narrated by experimenters and pre-recorded sentences by a puppet. Participants were asked to first decide whether the puppet made a statement or posed a question, and then to judge whether the statement was true or answer the question based on the story. Our results clearly show that Mandarin-speaking preschoolers are able to distinguish PolQs from AltQs at least from 3;3.

The role of relevance in early metaphor comprehension

Claudia Raihert and Myrto Grigoroglou

While metaphor comprehension is traditionally considered a "late" skill, more recent studies have found evidence of metaphorical understanding between ages 3 and 6. However, studies finding success at younger ages used metaphors that were conventionalized or that drew on salient visual similarities, hence increasing children's likelihood of making a correct choice without necessarily computing speaker-intended meaning. Here, we investigate 3- and 4-year-olds' acceptability judgments of novel, non-visual metaphors, by varying the relevance of the metaphor's contribution in context. We find that both 3- and 4-year-olds are better at correctly accepting a relevant metaphorical statement than at rejecting an irrelevant (and hence not meaningful) metaphor. Moreover, 4-year-olds performed significantly better than 3-year-olds on this task, and only 4-year-olds correctly accepted relevant metaphors at above-chance levels. Our findings contribute further evidence about the time course of metaphor comprehension development, while raising questions about children's tolerance towards pragmatic violations of relevance.

The role of context in the comprehension of metaphors: A visual world paradigm study with Turkish preschool children

Isin Tekin and Duygu Ozge Sarisoy

Understanding metaphors goes beyond literal meanings, with context playing a crucial role. We investigated the time-course of the effect of context on metaphorical interpretation in children (Age 4;4, N=29) and adults (Age 21.7, N=17) using a visual-world eye-tracking paradigm. Participants heard utterances containing metaphors or literal expressions, with context presented either first or last. In the context-first condition, target preference increased with context onset, showing context facilitates interpretation even before the metaphor onset. In the context-last condition, adults' target looks increased with the metaphor onset. Adults accessed metaphorical meanings directly regardless of context, while children followed an indirect route, initially preferring the literal image and shifting their gaze to the metaphorical image following the context-offset. Our results suggest that the location of context incrementally facilitates direct access to metaphorical meanings in children, while adults maintain direct access regardless of context.

Extending presupposition projection to co-speech gestures: The view from child language
Anita Sritharan, Janice Shum and Lyn Tieu
Co-speech gestures are produced simultaneously with spoken language expressions, and have been argued to give rise to inferences similar to presuppositions, which are known to project from embedded environments such as negation. Experimental work with adults confirms projection of gestural inferences from embedded environments, including the scope of negation, quantifiers, and modals. Here we extend the investigation to children, asking whether English-speaking children are sensitive to the inferences of co-speech gestures, and whether they can project and/or locally accommodate them in the scope of negation. The findings from our Truth Value Judgment Task reveal developing sensitivity to the linguistic inferences of co-speech gestures, with some evidence of projection of gestural inferences from the scope of negation (albeit to a lesser degree than adults). The data extend the investigation of presupposition development to the gestural domain and raise new questions about how children engage with co-linguistic content from other modalities.

Conjunction meets negation in contexts that cancel polarity sensitivity: Evidence from Mandarin Chinese
Na Gao and Stephen Crain
Three experiments were designed to investigate how Mandarin speakers including children interpret negative sentences with conjunction (he 'and'). The study evaluates the proposal that conjunction is polarity sensitive in Mandarin (i.e., a Positive Polarity Item) for both children and adults. If so, it is expected to be interpreted as taking scope over local negation but interpreted in situ when a PPI is elided from a VP or when introduced in an entailment of sentences with a focus operator. Experiment 1 demonstrated that child and adult participants interpreted conjunction as taking scope over local negation, yielding a 'neither' interpretation. Experiments 2 and 3 confirmed that the polarity sensitivity of Mandarin conjunction is cancelled in which negation or a PPI is introduced covertly, resulting in a 'not both' interpretation. Taken together, the complex pattern of linguistic behaviour by participants was exactly as predicted on the proposal that Mandarin conjunction is polarity sensitive.

Access to alternatives and linguistic units of quantification
David Barner, Hannah Bryer, Miguel Mejia, Sadie Ikin, Meghan Pierce and Mahesh Srinivasan
What counts as a unit for natural language? An intuitive answer is that an expression like "three rabbits" quantifies whole, individual, rabbits. However, recent studies suggest that both children and adults often count proper parts of objects as units for quantification. On one account, children include parts of broken objects as units because they lack access to better, alternative, descriptions of parts (i.e., they don't spontaneously encode a half rabbit as "a piece of a rabbit"), whereas adults generally access these alternative descriptions. An alternative is that adults but not children spontaneously consider contextual information that specifies whether a whole or part should count as a unit. We examined these ideas in four experiments and found that (1) both children and adults show sensitivity to context, (2) this cannot explain developmental differences, and (3) access to expressions like "piece" and "part" determines whether participants include parts when quantifying arrays.

Generalizations in child language: implicit and explicit adverbial quantification
Janek Guerrini, Kate Kinnaird, Benjamin Dever-Mendenhall and Athulya Aravind
Previous research on genericity has found that young children fail to distinguish generic sentences like "Birds

fly" from sentences with quantificational determiners like "All/some birds fly" (Hollander et al., 2002, a.o.). This has led theorists to suggest that generics are the default mode of generalization in human cognition (Gelman et al., 2015, a.o.). This study tests this hypothesis by comparing generics to sentences with quantificational adverbs like "Birds 'sometimes'/'always'/'usually' fly," as generic quantification is standardly thought of as parallel to adverbial quantification (Carlson, 1989, a.o.). We compared 3;6-to-4;6-year-olds' and adults' understanding of four types of adverbially quantified sentences in various frequency contexts. Results showed that children do not distinguish between generic and explicitly quantified sentences, but interpret generic sentences more tolerantly compared to adults. This raises a question for the generics-as-defaults hypothesis and opens up alternative theoretical possibilities.

The effect of constraining contexts on the L2 acquisition of English inverse scope
Baorui Xu, Theres Grüter and Bonnie D. Schwartz
English doubly-quantified sentences (e.g., "A boy climbed every tree") allow both a surface-scope reading (SR, a > every) and an inverse-scope reading (IR, every > a); the latter reading, by contrast, is not allowed in Mandarin (active) analogues. Previous studies found that IR is unavailable to L1-Mandarin L2ers of English. Employing a new experimental design, this study investigated whether contexts that allow only IR ("IR-biased contexts") can help L1-Mandarin L2ers of English acquire English IR. Results show: (a) that before exposure to IR-biased contexts, the L1-English speakers allowed (indeed, over-accepted) IR, while the L2ers generally rejected IR; (b) that in IR-biased contexts, the L2ers did accept IR but they did not extend it to contexts that allow both SR and IR. Overall, we find that constraining contexts lead to L2 *acceptance* of, but not to L2 *acquisition* of, English IR at least not under input conditions of the type attempted here.

'I wish I was blue!': The development of (un)attainable desires in child Greek
Irini Amanaki and Vina Tsakali
The study investigates how children acquire the meaning of sentences expressing desires and wishes. In the literature desires are described as pursuable attitudes in the actual world, while wishes express unattainable desires. Crucially, wishing requires the ability to think counterfactually, similarly to counterfactual conditionals. We tested 4-9 year-olds' understanding of present and counterfactual desires via a picture-selection-task in a 'Tell-me-who-is-talking'-mode. Our results show that all children perform adult-like on present desires but they extensively fail to interpret counterfactual desires correctly: 17/32 children (4-7 years) fail to interpret counterfactual desires up to a rate of 76%. The developmental pattern advances after the age of 8 (8-9;6 years), when children succeed at interpreting counterfactual wishes at a rate of 64%. Our findings provide support to previous studies claiming that children have an Actuality-bias and suggest that the development of counterfactual wishes is a prolonged process, possibly even longer than on counterfactual conditionals.

Children's acquisition of circumstantial modals: Do they know where necessity can come from?
Chui Yi Lee and Angelica Hill
Already 3 y.o. children produce deontic necessity modals, e.g., has to. However, although children use them, it's not clear whether they fully know what they mean. Adult speakers know necessity can originate from an external source or from within the subject to achieve some goal, yet prefer to interpret deontic necessity as originating from an external source. We are curious about the following question(1) Are L1 English-acquiring children are sensitive to the source of necessity when interpreting "has to", and(2) if so, do they also show an external necessity preference as English speaking adults do? We tested 3-8 y.o.children (n=28; Mage=5;05; SD=1;03) and adults (n=15) in a between-subject picture selection task. Our results support previous work suggesting that although children produce deontic modals, they struggle to understand their meaning. Yet our results offer novel insight into how children struggle to understand has to, one factor being the source of necessity.

Handshape change via acquisition in Lengua de Señas Nicaragüense (LSN)
Ann Senghas, Samantha Seltzer, Catherine O'Brien and Michele Miozzo
The forms of handshapes in natural sign languages are influenced by shared factors including hand physiology, motor systems, and the affordances of conceptual representations (e.g., iconicity). Miozzo and Peressotti

(2022) examined the adaptability of handshapes in 33 sign languages, finding that handshapes patterned similarly across languages. This raises questions about when such factors influence handshape: whether languages start similarly constrained and diverge, or whether they become more alike over time under these pressures. To investigate, we studied handshape longitudinally in Lengua de Señas Nicaragüense (LSN), a nascent sign language, by comparing signs collected in 2007 and 2017, from two sequential age cohorts, from LSN's first and second decade. Our findings show that within cohorts, handshape rankings did not significantly change over the decade. However, across cohorts, LSN handshapes became more similar to those of other languages, suggesting that influential factors exert pressure during language transmission through acquisition by new learners.

Longitudinal change in argument marking strategies: The first cohort of a new sign language
Rachel Miles and Rachel Mayberry
We investigate the emergence of devices for marking argument structure, including word order and grammatical use of space, in the first cohort of a new sign language in Vanuatu. We study changes within a cohort, rather than between cohorts. We found a marked decrease in constructed action and an increase in the use of spatial marking of arguments, classifiers, and spatial modulation of verbs, but little change in word order after a period of one year. Two thirds of the children in Vanuatu had a short period of contact with an existing sign language in Fiji. Therefore, results from Vanuatu are additionally compared to results from children in Fiji. Although the year one Vanuatu data is chronologically closer to language contact, the results diverged from those from Fiji. Strikingly, after an additional year with no language contact, the results from year two were more closely aligned with those from Fiji.

Pragmatic knowledge in asymmetric language contexts
Madeline Quam, Annemarie Kocab and Marie Coppola
We ask whether homesigners (deaf individuals who do not have sufficient access to acquire either a spoken or signed language and create their own systems in order to communicate with their family and friends) are sensitive to contexts with different perspectives, proactively adjusting the informativity of their utterances accordingly. The current study used a referential communication game, where homesigners described a target item and their communication partner (CP) had to select the correct item from four options. Half of the trials included a competitor item which created a context where homesigners needed to provide additional information, modifiers along with the noun, so that their CP could select the target. Across all participants, CPs picked the target well above chance. When there was a competitor, homesigners were 2.5 times more likely to produce modifiers in their initial utterances. This suggests homesigners use pragmatic knowledge despite minimal access to everyday discourse.

Distributional history of pseudowords informs word-referent mappings, but only when language has semantic seeds
Abigail Laver, Heesu Yun, Albert Kim and John Trueswell
An important understudied question is whether language learners can use purely distributional properties of words (each word's distributional history) to inform hypotheses about word meaning. We find strong evidence for this process in two experiments. Adults were exposed to an artificial language with three distinct distributional categories for pseudowords. Then in a cross-situational word-learning task, participants discovered the pseudowords' meanings by identifying word-referent consistencies across trials ("regli" always occurred with dog). Participants performed better when referents' semantic categories aligned with distributional categories. Critically, this advantage occurred only when some form-to-meaning mappings were first seeded during, or prior to, distributional exposure, consistent with the semantic seed hypothesis of syntactic bootstrapping.

Syntactic complementation signals emotion/mental state, but not color or shape, for young children acquiring adjectives
Kristen Syrett and Misha Becker
We present two preferential-pointing word learning studies demonstrating that children age 3-6 take the presence of a syntactic complement (finite clause or prepositional phrase, documented by Syrett & Becker (2024) to frequently occur with emotion/mental state adjectives in child-directed speech) following a novel

adjective to signal an abstract emotion/mental state, rather than a salient surface-level property such as shape or color. While children allow an adjective alone to map onto either property type, a syntactic complement systematically pulls their attention towards an emotion/mental state, thereby providing structural support for the acquisition of these adjectives, much as clausal complementation does for learning verbs such as think or know. Unlike previous adjective learning studies, ours pits a surface-level property against an abstract, internal one, thereby showing that syntax act as a "zoom lens" to focus word learners' attention on mental aspects of the situation that are otherwise not salient and outwardly observable.

28-month-olds use inferred thematic relations to bootstrap intransitive verb meanings
Laurel Perkins, Victoria Mateu and Nina Hyams
Prior studies investigating intransitive verb learning have tested alternating transitive and intransitive frames, or presented intransitive sentences with an accompanying scene. We show that 28-month-olds can bootstrap verb meanings (i) from intransitive sentences alone and (ii) in the absence of referential context. They do so by using animacy to infer thematic relations, consistent with knowledge of unaccusativity. Toddlers see dialogues with novel verbs in intransitive sentences with either inanimate or animate subjects. They then view side-by-side videos: a girl effects a change of state to an object, or performs an activity that does not effect a change. We find that toddlers who heard inanimate dialogues looked more to the change-of-state video than toddlers who heard animate dialogues. Toddlers' sensitivity to the correlations between intransitive argument structure and meaning raises the possibility that they represent the unaccusative/unergative distinction, even in a language where this is not marked in the overt morphosyntax.

The role of discourse in Mandarin-speaking children's comprehension of ambiguous wh-adjuncts
Xuan Wang, Na Gao, Yan Shi and Utako Minai
The Mandarin wh-operator zenme is ambiguous between how (manner) and why (cause) interpretations, which are disambiguated by the syntactic position of a modal verb. Children, even with this syntactic cue, robustly prefer how-interpretations, not accessing why-interpretations until age 5. We examined the role of discourse for zenme-disambiguation, as the why-interpretation of zenme is driven by the unexpectedness of the cause, conveying a "why-on-earth" interpretation. In our experiments, Mandarin-speaking children (aged 3-5) answered ambiguous and unambiguous zenme-questions about stories comprising cause and manner of an event: in one condition, stories first mentioned manner and then cause (MC order); in another condition, stories first mentioned cause and then manner (CM order). We found that 4-year-olds exhibited more why-interpretations for ambiguous zenme for the MC order than 3-year-olds, and that the MC order, interacting with the syntactic cue, facilitated children's access to why-interpretations. Our findings revealed a discourse cue affecting children's zenme disambiguation.

Movement Constraints Lead to Better Learning of Syntactic Structure
Jessica A. Kotfila, Heidi Getz and Elissa L. Newport
Constraints on syntactic movement have garnered attention in the language acquisition literature because of the significant challenges they pose for learning. In this study, we explore the possible benefits of these constraints for the learning of syntax. A grammar with constrained movement restricts the possible ordering of words and phrases, creating patterns across sentences of different types. Since learners are sensitive to distributional patterns in their input, we hypothesized that movement constraints would have beneficial consequences for learning. To test this hypothesis we compared the learning of an artificial grammar that modeled movement constraints found in natural languages to the learning of a grammar that did not. Adult learners exposed to the constrained movement grammar were significantly better at detecting word order violations than those exposed to the control grammar. We suggest this is because movement constraints create distributional patterns in learners' input, facilitating the acquisition of word order.

Children can use distributional cues to acquire recursive structures
Daoxin Li and Kathryn Schuler
This work investigates whether children can use distributional cues from non-embedded examples to learn recursive structures. While recursion is considered universally available, whether a given structure allows recursive embedding must be learned from language-specific experience given the cross- and within-linguistic differences. Corpus analyses and artificial language learning experiments with adults have supported a

proposal that the recursivity of a structure is learnable as a productive generalization from distributional cues in non-embedded input. However, it is important to examine children's behavior, because children are tasked with acquiring language and are known to behave differently from adults in similar tasks. In this work, we exposed children to non-embedded sentences in an artificial grammar, where we manipulated the productivity of the structure across conditions. At test, we found children exposed to productive input were more likely to accept recursively embedded sentences. The results suggest children can use distributional information to acquire recursive structures.

Agentivity and Unaccusativity in L2 English Acquisition
Yu Tazaki and Satoshi Hattori
Passive unaccusatives observed in L2 English interlanguage, such as Miki was arrived, has long attracted the interest of L2 researchers. In the past decade, it has been suggested that subject agentivity influences passivization errors. The subject agentive analysis posits that when the subject of unaccusatives is an agentive entity, it is likely to be generated outside VP as an external argument like that of unergatives. The present study aims to examine the analysis by conducting a 7-point scale grammaticality judgment task with 95 Japanese-speaking learners of English. Results of this study provided support for the subject agentive analysis, showing that learners more accurately reject passive unaccusatives with animate subjects than those with inanimate subjects. Moreover, their judgment scores on passive unaccusatives with animate subjects are similar to those on passive unergatives, suggesting that they are treated similarly in L2 interlanguage grammar.

More evidence on the UG-constrained knowledge of argument structure in L2 grammar
Takaaki Hirokawa and Takayuki Kimura
This study investigates whether principles of Universal Grammar (UG) guide the construction of syntactic structures in interlanguages. Specifically, it examines the unergative–unaccusative distinction, considered part of UG (Baker, 1988). We provide syntactic evidence for this distinction in Japanese–English interlanguage grammar. Assuming the UTAH, agentive NPs in unergative-VP constructions are generated in Spec-vP, and thematic NPs in unaccusative-VP constructions are generated in Comp-VP, although this difference is obscured in surface strings. We conducted an acceptability judgment task with native English speakers and elementary and intermediate Japanese-speaking learners of English (JLEs). Results showed that NSEs and intermediate JLEs only accepted grammatical configurations where the subject position is filled by an NP. In contrast, elementary JLEs accepted certain ungrammatical configurations where subject NPs are placed in situ. However, they never accepted ungrammatical sentences that were incompatible with UTAH. This suggests that early L2 acquisition stages are constrained by UG principles.

Subject and object wh-question comprehension among Farsi-speaking adults, monolingual children, and heritage child speakers of Farsi
Tina Ghaemi and Anamaria Bentea
Comprehending object which-questions is challenging for adults and children due to an agent-first interpretation bias. Morphosyntactic cues can guide revision or prevent incorrect interpretation. Farsi's object marker "ra" provides an early cue to prevent subject-first interpretation in object questions. This study examines whether Farsi-speaking adults and children, including heritage children, use "ra" in comprehending object questions. Participants included 15 monolingual children, 16 heritage child Farsi speakers, and 33 Farsi-speaking adults. They completed a picture-selection task with sentences varying by structure type and wh-word. Results showed a significant interaction between wh-word and structure type: adults and monolingual children displayed subject-object asymmetry only with who-questions, while heritage children showed it with both who- and which-questions. All groups processed object questions more slowly. Findings indicate object who-questions are difficult for all groups, with heritage children struggling to use "ra" for disambiguation.

The grammatical root of learning bias: Evidence from Mandarin-learning toddlers' early word order sensitivity
Lean Luo, Xiaolu Yang, Stella Christie and Rushen Shi
We report two studies testing Mandarin-learning 30-month-olds' sensitivity to two complex-NP orders: DEM-

NUM-CL-ADJ-DE-N (Order 1, typologically-common) and ADJ-DE-DEM-NUM-CL-N (Order 2, typologically-rare), with a classifier (CL) following the numeral and a functor signaling phrasal modification (DE). Across the two studies, we manipulated the predictability of NP-internal items via classifier use, and examined whether the cross-linguistically frequent order is consistently privileged in child language. With six visual fixation experiments, we showed that regardless of the use of classifiers, 30-month-olds reliably differentiated Order 1 from an additionally-constructed ungrammatical Order 3 (DEM-ADJ-DE-NUM-CL-N). By contrast, toddlers this age failed to differentiate Order 2 from either the ungrammatical Order 3 or the grammatical Order 1. Our results indicated toddlers' robust Order-1 sensitivity yet their less-successful Order-2 processing. Given the paucity of input utterances with NPs approximating either order, we argue that our findings reflect a formal bias of universal NP structure originating from the mental grammar.

Role of contextual cues in preschoolers' comprehension of Mandarin relative clauses
Jiawei Shi and Peng Zhou
The study investigated the role of referential context in preschoolers' comprehension of Mandarin center-embedded RCs, by directly comparing two types of contexts used in previous RC research. Forty 4-year-olds and forty 5-year-olds participated in a Truth Value Judgment Task. Test sentences were presented in two types of contexts, Noun Contrast Context and Verb Contrast Context, both of which involved two tokens of to-be-restricted head nouns and contrasting background events to meet RC's felicity conditions, but differed in the critical word that could be used to distinguish the two tokens. The results showed that 4-year-olds could correctly understand the RCs in Noun Contrast Context, but NOT Verb Contrast Context, suggesting that they had more limited capacity in using contextual cues when comprehending center-embedded RCs. By contrast, 5-year-olds could understand the RCs in both contexts. The findings further enhanced our knowledge of the factors underlying preschoolers' use of context in sentence comprehension.

Acquisition of particle drop in Japanese: a preliminary study
Yoshiki Fujiwara
This study investigates Japanese children's understanding of particle drop, focusing on locative arguments in unaccusative constructions. It reveals that children have sophisticated knowledge of Japanese particle drop, including case particle drop and topic particle drop. The investigation, based on data from children's spontaneous speech of longitudinal corpora, shows that children know that locative phrases in unaccusatives can drop their particle when they precede the subject or when the subject is null, but not when they appear between the subject and the unaccusative verb. These findings highlight children's comprehension of the structure of unaccusatives and their understanding of topic structure and topicalization in Japanese.

Spanish-English bilingual parents and children codeswitch more often when reading bilingual vs. monolingual books
Marissa Anne Castellana, Christine Potter and Viridiana Benitez
During shared reading, bilingual parents and children may encounter and use two languages and engage in codeswitching, a common feature in bilingual speech and books. However, it is unclear how families codeswitch when reading monolingual vs. bilingual books. This study examined how Spanish-English bilingual parent-child dyads use (1) Spanish vs. English and (2) codeswitching in extratextual talk when reading English-only monolingual books vs. Spanish-English bilingual books. Participants were 64 bilingual parent-child dyads (M=3.88 years) who read a monolingual and bilingual book. Linear mixed-effects models revealed that (1) parents produced similar amounts of English and Spanish, whereas children used significantly more English when reading both types of books, and (2) parents and children codeswitched more frequently when sharing the bilingual vs. monolingual book. Findings provide insights into how parents and children produce and experience two languages during monolingual and bilingual book reading interactions, which may shape emerging bilingual skills.

Comparing caregiver-child interactions in ASL and English: the influence of reading modality
Savannah Tellander and Allison Fitch
Shared book reading is considered a positive influence on language development. This may be because shared book reading facilitates caregiver input and conversational turns, offers opportunities for scaffolding new vocabulary, and promotes long bouts of shared gaze (Lieberman et al., 2014). The connections between

book reading and word learning are less clear for children acquiring American Sign Language (ASL), whose caregivers have additional translation and gaze management burdens. ASL e-books reduce these demands, but there may be fewer opportunities for the caregiver-child conversation, scaffolding new vocabulary, or participating in joint attention. We assessed caregiver-child interactions in ASL or English during typical shared book reading or utilizing a tablet-based e-book. Findings suggest differential effects of book modality on language group. Specifically, gaze behavior changed between book types for ASL users but not English users. For both groups, caregivers produced more extratextual utterances in the standard book condition relative to the tablet.

Preschoolers learn novel words in even difficult learning circumstances
Charlotte Emma Moore, Madison E. Williams and Krista Byers-Heinlein
Referential continuity –labelling the same referent repeatedly rather than switching back and forth between different referents –is thought to facilitate word learning. Referential discontinuities might be particularly challenging for learners who experience more continuity in their typical learning environments, like monolinguals. Bilinguals experience frequent language switches in everyday life and thus large amounts of discontinuity. In an interactive tablet task, we tested 64 Montreal three-year-olds (half bilingual) on their ability to learn novel words in two within-subjects conditions. Participants learned novel words in either continuous or discontinuous contexts. To our surprise, all participants showed robust learning across all conditions. We discuss possible explanations for this failure to replicate a previously-established effect in this particular task.

Older sibling effect on language development disappears in elementary school-aged children
Shiori Sato, Hiroki Higuchi, Asami Shinohara, Tessei Kobayashi, Tomoko Nishimura, Toshiki Iwabuchi and Kenji J. Tsuchiya
One of the environmental factors related to child language development is the existence of older siblings. A previous study with French-speaking 2- to 6-year-old preschoolers has shown that secondborn children with an older sibling tend to possess lower language skills than firstborn children without older siblings (Havron et al., 2019). To address the issue of whether the older sibling effect continues to exist from early childhood through the elementary school period, we analyzed the longitudinally measured language-skills data (verbal IQ in WPPSI at 4-5 years and verbal comprehension index in WISC-IV at 8-9 years) from the Hamamatsu Birth Cohort (HBC) study in Japanese-speaking children (N=665). The present findings demonstrate that the disadvantage of secondborn children on language skills exists only at 4-5 years but not at 8-9 years, providing new evidence that the older sibling effect on language development disappears in elementary school-aged children.

Online Application of Binding Principle A in L1 and L2 Sentence Processing
Sujeewa Hettiarachchi, Bimali Indrarathne, Norbert Vanek and Stepan Matejka
This eye-tracking study investigated how monolinguals and bilinguals use binding constraints during real-time anaphor resolution, focusing on whether the parser employs Principle A as an initial filter to rule out inaccessible antecedents or considers multiple cues and constraints in parallel. Participants included 55 English Native Speakers, 55 Sinhala Native Speakers, and 55 Sinhala L1-English L2 learners: While anaphors are obligatorily clause-bound in English, they can also be long-distance bound in Sinhala. During the experiment, participants listened to 45 ambiguous sentences in which the anaphor matched more than one antecedent and then completed a forced-choice picture matching task while their response times and eye-fixations were measured. The results from both eye-fixations and response times revealed that participants considered multiple cues in parallel when resolving ambiguous anaphors at all stages of processing, supporting the Multiple Constraints Hypothesis (Badecker & Straub, 2002) in online comprehension.

Contexts of language learning in 9 typologically diverse languages: Predicting child language by contingent adult speech
olivier rüst, Marco Baroni and Sabine Stoll
Child-directed speech is a key factor in language learning. Recent research suggests that contingent exchanges - when interlocutors actively interact - are of special importance. Here, we ask: Do contingent utterances support acquisition cross-linguistically?, and How do contingent interactions support the acquisition of linguistic structures? We hypothesize that contingent adult speech is a better predictor for child

speech than non-contingent adult speech, and that contingent speech is better adapted to child speech than non-contingent speech. In Study 1, we evaluate the predictability of child speech, based on contingent vs non-contingent adult speech using neural language models (LSTMs). In Study 2, we analyze which features of contingent vs. non-contingent adult speech might be responsible for better predictability of child speech.

Variation in the realization of word-final codas in loanwords: Evidence from child Greek
Ioanna Kappa and Eirini Ploumidi
This study is based on the longitudinal data of Greek-speaking children (ages: 1;06-5;00) and explores the acquisition and the extent of variation in the realization of loanwords by focusing on realization patterns of final codas, i.e. of singleton SONORANT and OBSTRUENT codas as well as coda clusters. Gradual progression from unmarked to marked forms occurs in the acquisition of final codas in loanwords. Multiple patterns that indicate intra-/inter-child variation emerge. Specifically, in singleton final codas deletion, vowel epenthesis, devoicing of voiced OBSTRUENTS. Coda clusters exhibit coda deletion, cluster reduction that results in the realization of the OBSTRUENT consonant, devoicing of the preserved voiced obstruent. Later in the course of acquisition, singleton and coda clusters emerge target-like. Interestingly, all these patterns may occur simultaneously in the children's speech. Coda clusters that consist of homorganic consonants, e.g.[ld, mf] emerge in the children's system before the non-homorganic ones, e.g. [k, lf].

How do mothers and children initiate conversational exchanges?: The dynamics of multimodal cue usage in beginning vocal exchanges across child development
Jun Ho Chai, Barbara Zapiór and Eon-Suk Ko
This study investigates the use of multimodal cues in initiating conversations between mothers and children, focusing on non-verbal communication and the role of the initiator. Utilizing the Ko Corpus of Korean mother-child interactions, which includes recordings of 35 dyads, the research examines how gestures, touch, and other non-verbal cues vary with the child's age, sex, and role. Findings reveal a significant decrease in non-verbal cue usage as children age, especially in mother-initiated exchanges, indicating a shift towards more verbal communication. Look cues and tactile cues involving objects are the most prevalent non-verbal cues preceding conversational islands, underscoring their importance in initiating communication. Both mothers and children show higher cue usage in their own-initiated blocks, suggesting strategic use of non-verbal communication to set the stage for verbal interaction. The study highlights the diminishing reliance on non-verbal cues with age and the adaptive nature of communicative strategies in mother-child interactions.

Investigating vowel hyperarticulation in infant-directed speech: insights from Korean mother-infant interactions
Eon-Suk Ko and Sunghye Cho
We investigate the vowel hyperarticulation hypothesis in Infant-Directed Speech (IDS) with twenty-two Korean mothers of children (7 girls) aged 9 to 16 months. Previous research presents conflicting findings, potentially influenced by word contexts, methods of operationalizing hyperarticulation and formant extraction. We used the Vowel Hypo- and Hyper-articulation (VHH) index as an alternative metric. Mothers taught nonce words with vowels /a/, /i/, and /u/ as labels for novel objects. Participants read books with the stimuli and explained the words in spontaneous speech, teaching both their child and a confederate adult. We analyzed 2883 vowel tokens, coded for style, target, and sentence position. Euclidean distances between vowel pairs were compared using paired t-tests, and differences in F1 and F2 values were examined using linear mixed-effects models. The VHH index showed Korean mothers hyperarticulated vowels in IDS, particularly in isolated and utterance-final words, emphasizing the need for careful methodological considerations in IDS studies.

6 Sunday, November 10th, 2024

Effects of L1 attrition on predictive processing in Japanese.
Theres Grüter and Sachiko Roos
This study examines the role of language experience on predictive processing by investigating to what ex-

tent predictive processing in the L1 is modulated by immersion in an L2 environment. 58 monolingually raised adult Japanese speakers with varying length-of-residence (LoR) in the U.S. completed a visual-world eye-tracking experiment testing predictive use of prenominal classifiers (replicating Mitsugi, 2018) and case-marking (replicating Kamide et al., 2003). Findings show a robust main effect of condition (different/same) for classifiers, with no modulation by LoR. The main effect of condition (accusative/dative) for case-marking, however, was significantly modulated by LoR, with the effect no longer robust among those with LoR 10 years. This differential pattern is reminiscent of findings from adult L2 learners of Japanese (Mitsugi, 2018; Mitsugi & MacWhinney, 2016), suggesting cues used more robustly in L2 processing may also be those that are more resilient to attrition in the L1.

Who did what to whom? Marking event participants in Nicaraguan homesign systems.
Annemarie Kocab, Madeline Quam, Marie Coppola and Jesse Snedeker
Two strong hypotheses bridge between typological studies of the frequency of different marking patterns and psychological studies of how these patterns are acquired. The word-order hypothesis proposes that order is a cognitively-salient cue, available to children before linguistic cues and thus appears early in language emergence. The agent-first hypothesis proposes that agents hold a privileged role in event representations and shape emerging languages. A recent study of Lengua de Señas Nicaragüense (LSN) found no preference for consistent or agent-initial word order. Instead LSN-signers used other linguistic devices. We looked at homesigners, each repersenting a different origin point for language emergence. We found no support for the agent-first hypothesis: most homesigners produced more patient-initial responses than agent-initial responses. We found no support for the word-order hypothesis: only one homesigner produced the same order on more than half the trials. Instead homesigners used a variety of other devices for marking participant roles.

Pragmatic factors facilitating children's universal quantification: Evidence from child Turkish.
Munir Ozturhan and Utako Minai
This study explores Turkish-speaking children's universal quantification, by examining two pragmatic factors which may reduce their quantifier spreading (q-spreading), erroneous rejection of universally-quantified statements like "Every child is carrying a box" when there is a box nobody is carrying as well as box-carrying children. Experiment 1 examined a Turkish-specific grammatical factor involving the focus-marking question particle mI. When mI is attached to the quantified-subject, conveying the "It is every child that is carrying a box" interpretation, children gave more adult-like responses, revealing the effect of focus marking helping them avoid q-spreading. Experiment 2 examined a discourse factor, manipulating the Question Under Discussion in the experimental discourse; children provided more adult-like responses when the quantification was clearly presented as the topic at hand. Our findings confirm children's successful universal quantification with pragmatic support, serving as the first to reveal the role of a language-specific grammatical factor (focus marking) facilitating children's quantification.

Emerging Phonological and Semantic Specificity in Infant's Lexical Processing.
Erin E. Campbell, Lillianna Righter and Elika Bergelson
Despite many experiments reporting effects of mispronunciation and semantic relatedness effects during lexical processing, the developmental timeline of infants' phonological and semantic specificity remains unclear. In two pre-registered, cross-sectional looking-while-listening experiments, we test the developmental timeline of children's phonological and semantic specificity in 9-24 month-olds (n=80; data collection ongoing). We hold the familiar-word stimuli constant across experiments and across a wide age range, allowing for precise control of tested lexical items. Based on initial analyses, in the Semantic Similarity Experiment we find an age effect but no trial-type effect: children did not show an overall influence of semantic relatedness in their target looking. In contrast, for the Mispronunciation Experiment we find both an age and trial-type effect, with preliminary support for this effect increasing with age. Implications for meaning- and form-based refinement over years one and two are discussed.

Structure flexibility in description of transitive events among native and late CSL signers.
Yuting Zhang, Hao Lin and Qi Cheng
This study investigates the consequences of language deprivation on the acquisition of spatial devices and structure flexibility in Chinese Sign Language (CSL) adult late signers. Using a scene description task

with manipulated visual arrangements and animacy levels, we elicited more non-canonical utterances from 10 native and 12 late CSL signers. While agent-patient relative order was still dominant, right-positioned agents elicited more patient-first structures (native: 37.2%; late: 26.5%), as compared to left-positioned agents (native: 34.1%; late: 14.0%). However, native signers used significantly more agreement markers (AM) in patient-first structures (88.6%, N=123) than late signers (28.2%, N=78), X^2= 66.832, p <.001. Native signers exhibit flexible word order modulated by spatial markers, while late signers struggle with using spatial markings consistently and accurately. These findings support the selective impact of delayed L1 acquisition, with complex structures involving spatial devices being more heavily influenced in late CSL signers.

Conditionally Literal: Exploring Conditional Reasoning in Children
Ebru Evcen and David Barner
Understanding conditional inferences is fundamental to human reasoning, allowing us to predict the consequences of actions. For instance, the conditional "If you tidy your toys, you'll get a reward" can be interpreted literally, meaning tidying toys is one way to get a reward, or pragmatically, implying it is the only way. Past studies show school-aged children (ages 7-12) struggle to arrive at literal meanings but, interestingly, compute adult-like, pragmatic interpretations at this age.One important limitation of past research is it hasn't tested cases where literal meanings are contextually appropriate. Here we tested scenarios with both literal and pragmatic meanings, as well as those with only the literal meaning is felicitous. We tested 106 children (ages 4-6) and found that preschoolers are adult-like in computing literal meanings of conditionals when contextually supported, and also can arrive at pragmatic meanings of conditionals. These findings inform theories of logical reasoning and implicature acquisition.

I spy with my little eye: Comparing different online word comprehension measures in infancy.
Andrea Sander-Montant, Laia Fibla and Krista Byers-Heinlein
The looking-while-listening (LWL) procedure is a popular way to measure infant word comprehension. Despite its popularity, it is unknown whether the various performance measures derived from LWL index the same construct or which are most robust. This study compares 11 LWL measures across five datasets of French–English bilingual children (ages 14–48 months). Pearson correlations and factor analyses allowed us to identify two robust factors related to whether the child initially looked at the target or distractor at the start of the trial. Some measures, like proportion looking to target, were informative across both trial types, while others were only informative for target- or distractor-initial trials. Linear models revealed that measures such as proportion looking to target were more closely related to performance predictors: age and language exposure, than other measures. These findings suggest that LWL measures' interpretability depends on LWL procedural factors, which might impact recommendations for best research practices.

Does chicken come before egg? Investigating word order sensitivity in L2 Chinese binomial processing.
Xiaolong Lu and Jue Wang
Word order is crucial for sentence and multiword expression processing, such as binomials, where two words of the same category are conjoined (e.g., chicken and egg). Despite their semantic compositionality and structural flexibility (Carroll & Conklin, 2020), binomials tend to follow a preferred order, making them ideal for studying L2 learners' word order sensitivity during processing (Altamimi & Conklin, 2024). We investigated binomial processing in L2 Chinese, considering binomial semantics (concreteness) and linguistic context. Our results from two online tasks indicate that L2 learners failed to exhibit sensitivity to word order variation in binomials with and without linguistic context, despite showing native-like word order preference in an offline task. Their word order (in)sensitivity does not differ between concrete and abstract binomials. Our finding suggests a different processing pattern for binomials as a type of formulaic expression. Additionally, L2 language processing patterns may not fully align with learners' language experience.

Children's difficulty comprehending 'but' is linked to revision.
Elizabeth Swanson, Ana Antonio and Alex de Carvalho
Children have been found to struggle with interpreting the connective 'but' before age seven. However, we provide new evidence that their difficulty is not merely due to a misinterpretation of 'but' itself, but rather involves difficulty with revising their initial expectations. In two experiments, we examined French-speaking

6-to-9-year-olds's interpretations of novel words in sentences containing 'alors' ('so') or 'mais' ('but'), e.g., "Lea wanted to heat up her food, [so/but] she put it in the rane." By varying whether the final interpretation of the novel word required revising the expectations created by the initial clause, we found that children successfully interpreted both 'so' and 'but' in sentences that did not require revision, but they failed in sentences requiring revision. Regardless of connective type, even by age nine, children struggled to regulate revision. We discuss possible factors contributing to variation in children's success, including the effect of socioeconomic status.

Evidence for top-down constraints and form-based prediction in 4–5 year-olds' lexical processing.

Margaret Kandel, Nan Li and Jesse C. Snedeker

We investigated whether children use top-down information to guide lexical processing by conducting a visual-world experiment with 4–5 year-olds and adults. We assessed the extent to which the phonemic cohort effect is modulated by sentence context, reflecting integration of top-down cues into bottom-up phonological processing. We observed cohort competition when target words were in neutral contexts but not when they were in highly constraining contexts. This modulation was equally strong in adults and children. Our results suggest that young children, like adults, can use top-down contextual cues to rule out semantically-incongruent candidates as they hear words unfold. Furthermore, in the high-constraint sentences, we found evidence that children pre-activated the form of the target words before they appeared in the sentences, suggesting that they also use context to predict upcoming words. We discuss how to integrate these findings with previous studies showing that children are less apt to use top-down constraints.

Plurality in L2-English production.

Tania Ionin, Amy Yuiko Atiles, Chae Eun Lee and Mien-Jen Wu

Second language learners have difficulty with inflectional morphology; while most research has focused on verbal L2 morphology, we explore how L1-Mandarin L2-English learners perform with nominal plural marking in time-pressured production, given that plural marking is ungrammatical with [-human] nouns in Mandarin. We contrast the predictions of the Morphological Congruency Hypothesis (MCH, Jiang 2007) and the Feature Reassembly Hypothesis (FRH, Lardiere 2009). We report on the results of two studies: written production (Authors, 2022) and oral production (new study), which used identical picture-based materials, and elicited plural marking both with and without lexical cues to plurality. Learners performed with high accuracy across modalities, and improved with proficiency; both learners and native-speaker controls exhibited the least accuracy in the absence of any lexical cues to plurality. These results go against the MCH and are consistent with the FRH, showing that feature reassembly is possible.

The acquisition of the quantification function of Chinese classifiers: An eye-tracking study of young Mandarin-speaking children.

Yunqi He, Aijun Huang, Likan Zhan and Fuyun Wu

Singularity and unification are two semantic dimensions of the quantification function of Chinese classifiers, which is to define a specific unit of measurement . This study explored the acquisition of the quantification function of individual classifier " 个" (ge) and five container classifiers (" 碗" (wan, bowl), " 盒" (he, box), " 盘" (pan, plate), " 袋" (dai, bag), and " 盆" (pen, basin)) in Mandarin-speaking children aged three to six using an eye-tracking paradigm. We found that sensitivity to classifiers' singularity and unification increases with age. The acquisition of individual classifiers precedes that of container classifiers, and the development of singularity and unification understanding is relatively independent. Additionally, that mastery of the Chinese numeral " 一" (yi, one) is not a prerequisite for quantification function acquisition. Our findings contribute to understanding the developmental trajectory of classifier acquisition in Chinese children.