First language acquisition
Morphology

Morphophonological factors in the acquisition of Antwerp Hasidic Yiddish noun plurals

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Abstract

Hasidic Yiddish is a living language spoken by adults and children in segregated communities around the world. The largest European native Yiddish-speaking center today is the Hasidic community in Antwerp. Members of this community are mostly bilingual, speaking Yiddish and Dutch, and praying in Loshn Koydesh (the 'holly tongue'). Our window onto native Yiddish development is the system of noun plurals that involves suffixation (bal-n 'ball-s'), stem modification (top-tep 'pot-s') or a combination of the two (boim-baimer 'tree-s'), clearly reflecting the Germanic and the Hebrew origins.
Since Antwerp HY is not well studied and in order to get a firm grasp of the target system Yiddish speaking children acquire, our first step was to investigate the adult system and to arrive at the basic description of the morphophonological alternations underlying plural formation in contemporary spoken Yiddish. Our findings revealed that the characteristics of the final rhyme of the singular word form may predict the selection of suffix and/or stem change. Thus, children were expected to produce the most predictable and consistent forms adults employ.
Participants were 80 Hasidic children in five age groups (5, 7, 9, 11) who were administered a noun plural naming test using pictures. Confirming our expectations, results show that highly predictable morphophonological alternations are early acquired. For example, children at the age of five already correctly select the suffix –s for bisyllabic nouns ending in a full vowel (velo-s 'bicycle-s') – this suffix is also highly predictably used with this type of nouns by adults from the same community. In contrast, alternations that were found to be less predictable in adult usage take a longer path of acquisition. For example, the plural of bisyllabic nouns ending in a nasal (xusn-xasanim 'groom-grooms') is not yet fully acquired at the age of 11.

First language acquisition
Syntax

DP-headed, demonstrative-headed and headless object relative clauses in child German

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Abstract

Friedmann et al. (2009) argue that Hebrew object relative clauses (ORCs) with only one NP-restricted argument (e.g., a full DP, when the other argument is a pronoun) are easier for children than those where both arguments are NP-restricted. This hypothesis was tested in German-speaking 4-to-5-year-olds, using ORCs with different pronoun types: demonstratives, 1st- and 3rd-person personal pronouns.
Exp.1: Fourteen children were asked to name the color of some animals on a screen using a question which embedded an ORC. Meanwhile, their eye-gazes were recorded. ORCs with two full DPs (ORC+2DP) were compared to demonstrative-headed ORCs (ORC+dem) and to ORCs with a 1st- or 3rd-person pronoun as embedded subject (ORC+1/3pro). Children's gazes to the target animal revealed that ORC+1pro were processed the fastest, followed by ORC+2DP, ORC+3pro and ORC+dem.
Exp.2: Twenty-three children participated in an elicitation task which involved stories where, e.g., a boy and a girl were touching one horse each. Then, one or both horses underwent a color change (one/two-contrast-scenario) and the experimenter asked a question about what happened. We found that ORC+dem, headless ORCs and ORC+2DPs were predominantly produced. ORC+dem and headless ORCs occured more often than ORC+2DPs in the one-contrast-scenario (17.5% and 27.2% vs. 3%) than in the two-contrast-scenario (14.3% and 12.6% vs. 10%).
Exp.1 suggests that defining children's difficulties in terms of NP-restriction is not sufficient. What distinguishes 3rd-person and demonstrative pronouns from full DPs and 1st-person pronouns is their referential dependency on a third entity in the discourse. In Exp.2, the ORC head referents are strongly activated by being contrastively focused. Therefore, pronominal ORC heads are licensed (Gundel et al., 1993). The presence of a second contrast enhances the production of an overt head, either as DP or demonstrative. Concluding, NP-restriction, co-reference resolution and information status influence children performance when producing/processing ORCs.
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Literacy and language
Phonetics and phonology

Development of phonological representations in young children

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Abstract

Development of phonological representations in young children
There is substantial debate in the literature about how children's phonological representations (PRs) develop and how they interact with phonological awareness (PA), vocabulary size and letter-sound knowledge. While the lexical restructuring model proposes that vocabulary growth drives PR segmentation down to the phoneme level (Metsala & Walley, 1998), grain size theory suggests that phonemic representation emerges only once children learn about phonemes through alphabetic instruction (Ziegler & Goswami, 2005). Past research has focussed predominantly on the development of children's explicit phonological awareness with relatively little investigation into the development of the underlying phonological representations themselves. This study uses novel measures of PR segmentation in 90 nursery and reception children to test predictions made by the key competing models of PR development. Measurements of PA, vocabulary size and letter-sound knowledge are also recorded. Segmentation of the underlying representations and children's explicit phonological awareness of them were both found to increase with age, and were significant predictors of one another. While PR segmentation was found to be predicted by vocabulary but not letter knowledge, the reverse pattern was found for PA. The results are consistent with data from illiterate adults which show that segmental representations emerge in the absence of literacy, but that conscious access to them may be limited unless letter-sound correspondences are learned (Ventura, Kolinsky, Fernandes, Querido & Morais, 2007). The implications of these findings will be discussed along with planned avenues for further research.

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Cultural and social factors in child language development
Language, general

Interactive effects of child and family processes in early language of Turkish-learning children: Do girls benefit from a stimulating home environment earlier than boys?

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Abstract

It is important to determine sources of variability in early linguistic skills in an ecological approach to language development. The current study investigates the contribution of availability of age-appropriate learning materials and provision of stimulating language interactions to the following language competencies of children as reported by their caregivers: (1) number of words produced, (2) number of words understood, (3) communicative actions-gestures produced, (4) number of noun and verb inflections used, (5) number of complex sentential constructions produced. In addition, family socio-economic background, maternal education, child age and gender were included as moderators of the effects of home environment on language skills of children. The data were collected by use of TIGE inventories, the Turkish adaptation of MacArthur-Bates-CDI inventories (Fenson et al.1993) and by use of the Turkish adaptation of HOME scales (Baydar et al. 2008) via interviews with a representative sample of mothers of 8- to 36-month-old children (N=3,538).

Results indicated that both provision of language-stimulating interactions and learning materials available at home is significantly associated with language competence of children regardless of family socio-economic status or maternal education. In addition, language stimulations and learning materials positively associated with expressive vocabulary skills of children independent of age and gender of children. On the other hand, there were interactive effects of availability of learning materials with child age and gender on (i) receptive vocabulary, (ii) produced communicative actions and gestures, (iii) and expressive complex constructions. Although availability of learning materials at home is positively associated with language competence of both sexes, this relationship is observed earlier for girls than for boys. The importance of learning materials becomes more pronounced for boys with age. Results show that children who experience stimulating environments display more developed language skills than children who experience less stimulating environments. Yet, girls benefit from a stimulating home environment as a means of language support earlier than boys.

Cultural and social factors in child language development
Language, general

Future Talk, Plans, and Hypothetical Thinking in Young Children from Three Social Groups in Argentina

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Abstract

Nelson (1989, 2007) and Hudson (2006) maintain that prediction of future events, which may involve planning and hypothetical thinking, is a critical dimension of development. Previous studies on this topic have focused on middle income children. In contrast this study analyzes the future talk and planning skills shown by children from three social groups in Argentina: marginalized urban neighborhoods (MU), Toba native suburban communities (TN), and middle-income families (MI).
Thirty 4-year-old children –10 MI, 10 MU, 10 TN– were asked about their plans for Children's Day, a widespread celebration in Argentina. Once they finished formulating their plan, they were presented with hypothetical mishaps that could take place in the future event. They were then asked to think of a way to remedy the situations. The analysis considers 1) the temporal frame of reference –future, hypothetical, past, and general- of each elaboration; 2) the strategies employed to face the mishaps: abandoning the plan (AP), denying the obstacle (DO), and modifying the plan (MP).
Results showed that the three groups elaborate by referring to past and general events, but MI and MU do it more than TN (Present:TN:0.27,MI:0.43,UM:0.48; Past:TN:0.03;MI:0.07;MU:0.05). The TN children's elaborations adopted a future frame more often than the other groups´ elaborations (TN:0.64;MI:0.31; MU:0.42;ANOVA:F(2.27)= 5.07, MSE=.056; p<.01). A hypothetical frame was rarely adopted in the accounts (TN:0.05;MI:0.12;MU:0.03). However, when the mishaps were presented, the three groups of children tend to use a MP strategy (TN: MP:0.84;DO:0.11;AP:0.11ANOVA:F(2.48)=15.89,MSE=0.22,p<.001; MI: MP:0.84;DO:0.16 AP:0 ANOVA: F(2.48)=35.52, MSE=0.44, p<.001; MU MP:0.72; DO:0.38 AB:0.07 ANOVA: F(2.48)=9.13, MSE=0.34, p<.001) that resorts more often to a hypothetical frame of reference than the other strategies (MP:0.36 versus 0.06; t(71)=2.88, p<.01). Therefore, although the hypothetical frame of reference was adopted infrequently in the accounts, it was used when the cognitive strategy demanded it, showing a relationship between strategy and linguistic resources.

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Cognition and language development
Language, general

Evidence for a Jealousy-Envy Distinction in School-Age Children's Talk about Emotions

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Abstract

Jealousy and envy are characterized as separate emotions based on different causal frameworks: Whereas jealousy is motivated by a perceived threat to a valuable relationship, envy stems from coveting the possessions or traits of others. Our study is the first to compare children's talk about jealousy and envy. Forty girls and 40 boys (5- to 11-year-olds) were presented two jealousy and two envy vignettes and were asked to identify and explain the main character's feelings. Children's utterances were coded for speech style: elaborative (i.e., embellishing the story), repetitive (i.e., repeating the investigator's statements), and evaluative (i.e., questioning, confirming, or negating the investigator's statements), as well as for the type of emotion noted. Additionally, children were given measures of emotion comprehension, perspective-taking ability, and verbal intelligence (PPVT).

Analyses revealed that children used the term "jealous" interchangeably for feelings of jealousy and envy during middle childhood. However, the results also supported a distinction between the two emotions in that: 1) children were more likely to describe the main character as "sad" within jealousy vignettes and "angry" within envy vignettes; 2) children first used the term "jealous" about a year earlier within the context of jealousy versus envy; and 3) children used more repetition when explaining feelings of envy than jealousy. Whereas PPVT scores and perspective-taking ability predicted increased likelihood of using the term "jealous" across both types of vignettes, children's emotion understanding contributed to the use of the term "jealous" only for envy vignettes. The results suggest that children first began to talk about jealousy explicitly within contexts involving potential threats to relationships and status; children may perceive jealousy and envy differently but use the same term for both. These findings have implications for discourse strategies for helping children to cope with issues of inter-personal rivalry, complex negative emotions, and peer aggression.

First language acquisition
Morphology

Calculating Mean Length of Utterance for Eastern Canadian Inuktitut: Morphemes, Words, or Syllables?

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Abstract

Few reliable language assessment measures are available for Inuktitut, although virtually all Inuit children in eastern Canada still learn Inuktitut as their native language. Here, we examine the viability for use in Inuktitut of one of the most commonly-used measures of preschool language ability cross-linguistically: the mean length of utterance (MLU). MLU is typically calculated by morpheme (MLU-M), but this presents two difficulties for Inuktitut. First, MLU-M requires numerous assumptions about morpheme division and productivity, particularly difficult for morphologically complex languages like Inuktitut. Second, dividing utterances into morphemes requires considerable time and linguistic knowledge, often not available in the typical assessment context. Alternatives requiring fewer assumptions and that are easier to calculate reliably include MLU in words (MLU-W) and syllables (MLU-S). One or both of these accurately measures language ability (i.e., correlates highly with MLU-M) in other languages (Dutch: Arlman-Rupp et al. 1975; Irish: Hickey 1991; English: Brundage & Bernstein Ratner 1989, Parker & Brorson 2005, Aoyama et al. 2010). However, the differences in morphosyntactic structure between these languages and Inuktitut (polysynthesis, extensive argument ellipsis, morphological complexity) make it unclear whether these findings are applicable to Inuktitut. Therefore, we investigate here whether MLU-M, MLU-W, and MLU-S accurately measure language ability in Inuktitut. Two types of data are analyzed: spontaneous speech from nine typically-developing 1- to 5-year-olds, and elicited narratives from six 8-year-olds, six 15-year-olds, and six adults. Results show that each MLU measure increases with age and linguistic complexity, with a very high correlation between them (MLU-M and MLU-W: r=.91 for preschoolers, r=.94 for narratives; MLU-M and MLU-S: r=.97 for preschoolers, r=.99 for narratives). We conclude that all three measures show promise as means of assessing language development. Importantly, both MLU-W and MLU-S seem linguistically reliable and also practical for use by those with little linguistic knowledge of Inuktitut.

First language acquisition
Morphology

ACQUISITION OF RELATIVE CLAUSES IN TURKISH: AN ANALYSIS OF NATURALISTIC DATA

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Abstract

The acquisition of relative clauses (RC) has been studied both in longitudinal and experimental studies (Slobin, 1986; Ekmekçi, 2001; Brandt, Diessel & Tomasello, 2008). In Turkish, RCs have been reported to be acquired late due to morphological complexity (Slobin, 1982; 1986).
Acquisition order of RCs in Turkish has been described by Özcan (1997) as SS>OS>SO>OO and the early acquisition of subject relativization was considered to be due to the morphological simplicity. However, Ekmekçi's results (1990) contradict with Özcan (1997). Özge, Marinis & Zeyrek (2009) showed that Turkish children produce more subject RCs than object RCs. Although many experimental studies were conducted on how Turkish children use RCs in experimental settings, studies analyzing naturalistic data are rare.
Previous studies analyzed naturalistic data and showed that CDS had very few RCs. Turkish CDS; therefore, does not seem to be parallel to the acquisition pattern of RCs. These puzzle-like research findings about the acquisition of RCs has been the fundamental base of this study.
We aim to further investigate this puzzle focusing on children's speech. We intend to analyse the use of RCs by children between 01;00-03;06 in two complementary data sets: longitudinal and experimental. The longitudinal data set is based on the monthly video-recordings of 5 children between ages of 01;00 - 02;04 and the audio-recordings of 4 children between the ages of 02;00- 03;06. The experimental data set is based on the video-recordings of 20 children (aged 01;04 and 02;08) in book-reading and toy-play contexts. Preliminary analysis of the data suggest that the use of relative clauses by children is rather limited. However, we have instances where the children use both subject and object relative clauses correctly and productively starting at the age of 2;8.
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First language acquisition
Phonetics and phonology

Do production abilities modulate infants' sensitivity to audiovisual speech cues?

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Abstract

Recent studies suggest that infants' audiovisual speech perception is influenced by articulatory experience: Infants are better able to match non-canonical speech sounds to the corresponding mouth gesture when the movement is part of their motoric repertoire (Mugitani et al., 2008); and concurrently performed lip movements modulate infants' sensitivity to audiovisual congruencies (Yeung & Werker, 2013). Yet, previous studies did not directly test if infants' emerging productive abilities modulate their native audiovisual speech perception. Is it easier for an infant to detect audiovisual (in)congruencies if she already produces the corresponding sound in her babbling?
Using a preferential looking paradigm, we tested 44 German 6-month-olds on their ability to detect mismatches between concurrently presented auditory and visual native vowels and related their performance to the production of these vowels in infants' babbling and to infants' ability to discriminate these vowels in auditory perception when no visual cue was presented. Specifically, we tested infants on the vowel contrasts /a/-/o/ and /a/-/e/. Results show that infants were perfectly able to discriminate the vowel contrasts in auditory perception but that their ability to detect mismatches between auditory and visually presented speech cues differed depending on the vowel involved (with better performance for the /a/-/o/ than for the /a/-/e/ contrast). Importantly, infants' sensitivity to audiovisual mismatches was not modulated by their articulatory knowledge, i.e., infants' performance did not differ depending on whether a vowel was already produced in babbling or not.
This suggests that – aside from infants' ability to match non-native audiovisual cues (Pons et al., 2009) – their ability to match native auditory and visual cues still develops throughout the first year of life. Furthermore, it indicates a potential role of salient vowel cues in the development of audiovisual speech perception while emerging productive abilities seem to have only limited effects.
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First language acquisition
Language, general

Frequency and positional saliency of nouns and verbs in Turkish and French caregivers' speech across two contexts

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Abstract

Early lexicon composition differs in children acquiring different languages: the noun bias is more or less important in different languages. Among the explanations given for this, frequency of word type/token in caregivers' speech, positional saliency, as well as context, have been considered but rarely simultaneously and primarily in the comparison between English and Asian languages.
The goal of this study is to compare Turkish and French caregivers' speech in two contexts (book-reading, BR and toy-play, TP) considering frequency of verb and noun types and tokens as well as the position of these two grammatical categories in the utterances. The differences between French and Turkish particularly in the domain of noun/verb use exhibit a valuable contrastive puzzle to solve with regard to some recent findings in early French and Turkish lexical acquisition. French can be considered as a noun-friendly language, whereas Turkish presents some common properties with verb-friendly languages.
Our corpus consists of 80 video recordings of 10 minutes each in which 20 monolingual French-speaking and 20 monolingual Turkish-speaking children aged 16-34 months are interacting with their mothers in two contexts (BR / TP). These recordings have been transcribed, coded and analyzed according to the CHILDES standards (MacWhinney, 2000). There was no language effect on either verb or noun frequencies. The only crosslinguistic difference emerged from an analysis of noun vs. verb types, context by context. In both languages, context had an influence on noun and verb use. The syntactic analyses revealed a language and a context effect on utterance length. Concerning verb and noun position, Turkish mothers used twice as many verbs than nouns in final position in both contexts. In French we observed the reverse trend: there were more nouns than verbs in final position. These results show clearly that context played an important and consistent role on mother's linguistic behaviour whereas as the influence of language was much less consistent.

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First language acquisition
Syntax

Mandarin-speaking children's knowledge of the quantifier Dou

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Abstract

In Mandarin Chinese, the adverbial quantifier dou (English 'all') is governed by two semantic constraints. First, it can only quantify over plural noun phrases (that appear to its left). Second, when dou quantifies over a disjunctive phrase, the result is a 'conjunctive' interpretation. Consider examples (1)-(2). In (1) dou cannot quantify over the singular NP gongfu xiongmao 'Kung Fu Panda.' Rather dou quantifies over the disjunctive phrase (zai xiaomao huozhe xiaogou shenbian 'next to a cat or a dog,' yielding a conjunctive entailment – that Kung Fu Panda planted a tree next to a dog and next to a cat. By contrast, when dou quantifies over the plural NP xiongmaomen 'pandas' in (2), the disjunctive phrase has 'disjunctive' truth conditions, so (2) means that the pandas all planted a tree next to a cat or next to a dog.

(1)zai xiaomao huozhe xiaogou shenbian, gongfu xiongmao dou zhongle shu.
'Next to a cat or a dog, Kung Fu Panda (all) planted a tree.'
(2)zai xiaomao huozhe xiaogou shenbian, xiongmaomen dou zhongle shu.
'Next to a cat or a dog, Pandas (all) planted a tree.'

To assess Mandarin-speaking children's knowledge of the semantic constraints on the interpretation of sentences with the quantifier dou, twenty-seven 4-year-old children were asked to respond to sentences like (1) and (2) using a Truth Value Judgement task. On a typical trial, three pandas (one was Kung Fu Panda) planted a tree next to a cat, but none planted a tree next to a dog. The children were asked to judge whether (1) and (2) were true or false descriptions of the story. The fact that children, like adults, consistently judged (1) to be false, but (2) to be true is evidence that, by age 4, Mandarin-speaking children have knowledge of the semantic constraints on dou.

Language development in atypical populations
Semantics and lexicon

Thematic role assignment in children with SLI: evidence from eye movements during listening.

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Abstract

Different psycholinguistic theories have suggested the importance of argument structure in the thematic role assignment process during real-time sentence comprehension. To date no study has yet examined the thematic role assignment process on on-line spoken language comprehension in children with Specific Language Impairment (SLI). Twenty-five children with SLI (ages 5;3-8;2 [years;months]), twenty-five age-matched controls (ages 5;3-8;2), twenty-five MLU-w controls (ages 3;3-7;1 years), and 31 adults took part in the study. Eye movements of participants were monitored while hearing twenty-four sentences like El hombre lee con atención un cuento en la cama (translation: The man reads carefully a story book on the bed) in the presence of four depicted objects one of which was the target (story book), the competitor (bed) and two distracters (wardrobe and grape). The proportion of looks revealed that while the meaning of the verb was retrieved, the upcoming semantically appropriate thematic role referent was rapidly anticipated. However, the proportion of looks to the Themes, Sources/Goals and Instruments referents were significantly higher than the looks to the Locatives. This pattern was found for adults as well as children with and without language impairment. Implications for theories that characterize SLI impairments are discussed.

Language development in atypical populations
Language, general

Sentence repetition task as a powerful diagnostic tool in French children with SLI

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Abstract

Sentence repetition is considered as a psycholinguistic marker of specific language impairment (SLI) (i.e., Redmond et al., 2011). However, little is known about specificity and sensitivity for most language tests, especially in French (Thordardottir et al., 2011). This study aims at assessing the specificity and sensitivity of a sentence repetition task frequently used in clinical evaluations (Chevrie-Muller et al., 2010). This task could be especially interesting because clinicians can compute separate linguistic scores depending on the answers produced by the children, enabling them to get a glimpse of the areas of language difficulties in these children.
Fourty-four school-age children with SLI, and 34 age-and-IQ-matched controls participated in this study. Children with SLI were diagnosed by certified speech-language pathologists and attained specific language classes in special needs schools from at least one year. Moreover, they scored more than -1.25 SD below expected normative performance in at least 2 language areas on other standardised tests used in previous studies including French children with SLI.
Results show that both sensitivity and specificity of general scores were high (over 80%) at three cut-off points widely used in clinical practice: -1SD, -1.25 SD, -2 SD. Moreover, an exploratory factorial analysis indicates that two distinct factors can be dissociated in children productions: a morphosyntactic factor and a lexico-semantic factor, together explaining 96.48% of the variance in production scores.
These results reveal that the sentence repetition task is a powerful diagnostic tool in French children with SLI.
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First language acquisition
Morphology

Acquisition of compounds in typologically different languages: Evidence from Estonian, Russian, and Finnish

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Abstract

Researchers agree that in acquisition of morphology, children are sensitive to typical features of the acquired language and acquire them early and effortlessly (Dressler 1999, Laaha, Gillis 2007). Our aims were 1) to detect the main factors influencing acquisition of compounds in languages with varying degrees of productivity (compound-rich Estonian, Finnish vs. non-compound rich Russian), 2) to reveal the differences which depend on the peculiarities of the compound system (agglutinating Estonian, Finnish vs. inflecting Russian), 3) to provide new data to verify the hypothesis regarding the gradual contrast between more compounding languages (e.g. Germanic) and more derivational languages (Romance, Slavic).

The longitudinal corpora of three Russian, two Estonian and two Finnish typically developing monolingual children (145 hours) were transcribed (CHILDES) and analyzed according to first emergence, productive usage, frequency, simplicity and transparency, and also according to the impact of morphological wealth in CDS on CS (methods used in Cross-linguistic project "Pre- and Protomorphology in Language Acquisition").

First compounds, productive patterns in all languages, appear at the same age. Children prefer frequent patterns of compounding, for example Russians use interfixed forms, while the Estonians and Finns do not. Factors such as simplicity and frequency are intertwined with acquisition: simple structures occur concurrently with frequent ones but simplicity does not influence the choice of first compounds more strongly than frequency and frequency effect is not straightforward: Differences exist in individual usage in CDS, and in its reflection in CS.

Thus, the target system of compounds is reflected in the process of acquisition: the much stronger occurrence of analogical innovative compounds in Estonian and Finnish than in Russian CS supports our claim of higher productivity of compounding in Finnish and Estonian CS than in Russian CS. In all languages those compounds with models which are transparent morphotactically and morphosemantically, and also productive.

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Literacy and language
Semantics and lexicon

Bestselling picture books: should parents buy them? How vocabulary and syntax measure up

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Abstract

Shared picture book reading is an important catalyst for acquiring vocabulary (Senechal & LeFevre, 2001) and developing literacy skills (Dickenson & Tabors, 2001). However, not all books contribute equally to linguistic competence (e.g. van Kleeck, 2003). One method parents may use for selecting the books they read to their children is to refer to bestsellers lists such as those printed in the New York Times and Publishers Weekly. Approximately 50% of those books are award winners, including Caldecott award winners and Notable books. While the role of pictures in award-winning books on language learning has been investigated (e.g. Gambrell & Sololski, 1983), an investigation of vocabulary and sentence structure within the stories themselves is largely missing. The purpose of this investigation was to examine the language contained in bestselling picture books aimed at children ages 3 – 7 or 4 – 8 years. Using CHAT and CLAN (MacWhinney, 2000) to transcribe the top 10 bestselling picture books from Publishers Weekly for each of the years from 2001 – 2010, we calculated sentence complexity and lexical diversity for three types of books: Caldecott award winners, Notable books, and book that had never won an award. Findings indicated that Notable books provide access to more diverse vocabulary, as measured by lexical diversity (VOCD) than other types of books, and that non-award winning books contain more sophisticated sentence structures than other types of books, as determined by mean length of utterance. While each type of book may have its strength, when taken as a whole, bestseller lists can provide parents with picture book options that can support both burgeoning vocabulary and developing grammatical prowess. Book choices containing varied vocabulary and sentence structures. Further, when combined with illustrations, these books may be powerful facilitators of literacy skills regardless of whether or not they are award-winners.

Language development in atypical populations
Language, general

Morphology and sentence repetition tasks for screening Spanish-speaking children with Specific/Primary Language Impairment

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Abstract

Few standardized tests that focus on Spanish grammar vulnerabilities are available for the identification of Spanish-speaking children with Specific/Primary Language Impairment (SLI). The National Institute of Statistic and Geography (2010) has reported that altogether, a mean of 8.5% of Mexican children and adults have a language problem. Therefore, the identification of children with SLI is limited and the development of a language screener is needed.
Previous research in Spanish has indicated deficits with articles, prepositions, clitics and derivational morphemes (Anderson & Souto, 2005; Auza & Morgan, 2013; Bedore & Leonard, 2001; Gutiérrez-Clellen, Restrepo, & Simón-Cereijido, 2006; Morgan, Restrepo & Auza, 2009; among others) and sentence repetition (Sanz-Torrent et al, 2007; Simón-Cereijido & Gutiérrez-Clellen, 2007).
The aim of the study was to report results on a Spanish language screener that includes two tasks: morphology and sentence repetition. The prediction was that they would differentiate children with SLI from children with Typical Language Development (TLD).
Four hundred monolingual Spanish-speaking children (4-6 years) were recruited from public and private schools in Mexico: (SLI=60; TLD=340). Participants were administered language tests; a language sample; parent report of language history/concern for SLI; and the clinical opinion of two native speech-language pathologists.
The morphology task consisted of 13 grammatical vulnerable particles for children with SLI. The sentence repetition task consisted of 12 simple and complex sentences based on Spanish acquisition.
Results indicated significant differences (TLD>SLI) on the total score of both tasks. Also, TLD and SLI groups showed an increase in correct responses (4 yrs < 5 yrs < 6 yrs). Classification accuracy results (following ROC curves) showed that sensitivity/specificity were higher than .80 for all age groups. The benefits of the screener and of an early identification in Spanish-speaking children with SLI are discussed.

Cognition and language development
Pragmatics

Do preschoolers understand ironic utterances?

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Abstract

Comprehension of verbal irony is an example of pragmatic competence in understanding non-literal language, involving a number of mental processes. The phenomenon has been studied for over 30 years in various languages (e.g. Pexman, Glenwright 2007, Barbe 1992). However, the results are inconsistent as to the age when this competence is acquired (Recchia et al. 2010). So far, there has been hardly any research on the understanding of ironic utterances in Polish-speaking children. The presented study aimed to provide answers to questions about the developmental trajectories of irony comprehension in Polish-speaking preschoolers and about how children ascribe function to ironic utterances. In the sample, 30 four-year-olds, 30 five-year-olds and 30 six-year-olds were presented with a story comprehension task in the form of audio and visual stimuli programmed in the E-prime software and then asked to answer a series of questions (checking their understanding of the intended utterance meaning, evaluation of the degree to which it was funny and evaluation of the speaker's attitude). Children responded by touching the screen, which made it possible to measure reaction times. Also Reflection on Thinking Test (by Białecka-Pikul) was used to measure children's Theory of Mind. The results reveal that children from the youngest group do recognize the intended meaning in ironic utterances but not the intentionality of the duality of meanings (surface and implicit). Five- and six-year-olds are capable of the latter, also demonstrating some meta-pragmatic competencies. Reaction times differ significantly among the three age groups, which indicates developmental change in processing verbal non-literal information. Also, the majority of children who comprehend ironic meaning recognize the criticism function of irony (80%). Irony comprehension also proved to correlate with standardized measures for Theory of Mind. These results are an indication that children understand non-literal language much earlier than reported in previous studies.

Cognition and language development
Phonetics and phonology

Phonological development in children with otitis media with effusion: data from European Portuguese

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Abstract

Studies on the phonological profile of Portuguese children with otitis media with effusion (OME) are not available for European Portuguese. The debate on the impact of OME in children's linguistic development suggests the importance of phonological cues for the diagnosis (Stoel-Gammon & Dunn 1985, among others). Most studies are based on heterogeneous samples which include children with different clinical histories, such as the emergence of OME in different age period. However, some scholars suggest that early OME episodes (first year of life) have a stronger impact in phonological/linguistic development than their late occurrence (after 3;0) (Gravel & Wallace, 1992, among others). Our research question is then: what is the impact of age of emergence of OME in phonological development?

Many scholars identified the most powerful variables to evaluate phonological development (Fikkert, 2007). We selected syllable structure (Onset/Coda), word stress (stressed/unstressed) and position within the word (initial, medial, final) to evaluate the production of fricatives and liquids based on a picture naming test. A sample of 26 Portuguese children aged 3;0 to 6;0 was considered: a control group (n=13); two experimental groups of children with OME (n=13; Group 1: OME during the first year of life (n=6); Group 2: OME after 3;0 (n=7)).

An effect of age of emergence of OME was attested: Group 1 shows a deficit in development (substitutions and omissions to overcome problematic segments under complex prosodic structures – branching syllabic constituents; word-medial position); Group 2, on the contrary, shows a behavior similar to the one of the control group (levels of accuracy for the control group show mastery of the structures). The data discussion will be focused on the impact of age of emergence of OME, on the effect of (un)marked segmental and prosodic constraints, and on the identification of phonological clinical markers for this pathology.

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First language acquisition
Pragmatics

Pragmatics and syntax in the early interpretation of negated quantifiers

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Abstract

Children tend to accept a weak quantifier in contexts where a strong one holds (Noveck 2004), failing to generate a Scalar Implicature (SI). When a sentence consists of a quantifier plus negation, double knowledge is required: (i) syntactic knowledge to determine the scope of negation and (ii) pragmatic knowledge to derive the SI. This study aims to test whether 5-year-old (Spanish)-Basque children exhibit both pieces of knowledge by means of two experiments.

English Sentences (1a, 1a´) can be interpreted as (1b), where NOT has wide scope ('NONE-reading'), or as (1c), where NOT has narrow scope ('SOME-reading').

(1) a. NOT ALL the apples are in the boxes.
a´. ALL the apples are NOT in the boxes.
b. ¬ (ALL the apples are in the boxes)
c. ¬ALL the apples are in the boxes.

The sentence-evaluation task (Experiment 1) tested children's comprehension of 'not all' for Spanish no todos (N>Q) and for Basque guztiak ez (Q>N) in Pragmatically Incorrect (PI) sentences. Results showed that while Spanish children and controls rejected PI sentences in 52% and 92% of cases, Basque children and adults only rejected them in 24% and 53% of cases, respectively.

A modified version of the materials based on the substitution items of guztiak ez (Q>N) by ez guztiak 'not all' (N>Q) (Experiment 2) showed that Basque children and adults now rejected PI sentences in 50% and 64% of cases, respectively.

Data reveal (i) that 5-year-old Basque children are sentisitive to the position of NOT, since both adults and children prefer the isomporphic 'SOME-reading' in (N>Q) expressions (Musolino&Lidz, 2006) and (ii) that both pragmatic and syntactic knowledge are required to comprehend sentences consisting of a negated quantifier.

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Cultural and social factors in child language development
Phonetics and phonology

Family socioeconomic status and gender influences on children's verbal skills and sociolinguistic uses: A developmental perspective across the preschool years.

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Abstract

Socio-economic status (SES) and gender have been repeatedly identified as a source of variation in various aspects of language, with high-SES children and girls developing certain features of language earlier than same-age children. However, the question of whether SES impacts equally upon boys and girls, together with the magnitude and consistency of these differences throughout development, remains open. Moreover, children encounter tremendous variation in the language spoken around them. This variation is not random, but is instead socially structured along various dimensions such as speakers' sociodemographic characteristics. However, questions concerning how young children deal with this variation during language acquisition and when and how they acquire variable sociolinguistic patterns raise important issues that have been notably neglected.

To assess SES and gender influences on both children's verbal skills and sociolinguistic uses across early childhood, we focused on how children, from 2 to 6 years old, from two contrasting social backgrounds, acquire a frequent phonological alternation in French: liaison. Liaisons are of two types: obligatory liaisons which are categorical and do not vary with speakers' characteristics in adults, and variable liaisons which are a sociolinguistic variable and are more frequently produced by higher-SES adults and women. In this perspective, 262 children, all French native speakers, participated in a picture naming task eliciting the production of both types of liaisons.

We evidenced gender differences for obligatory liaisons in lower-SES children, but not in higher-SES children; lower-SES boys presented the lowest performances. Social differences were marked at the youngest age, but decreased with time, especially for lower-SES girls. Variable liaisons revealed social differences that appeared progressively during preschool years, but no gender differences.

Therefore, liaisons are prone to evidence the impact of quantitative and qualitative differences in children's input and thus to explore the causes of SES and gender differences in language.

Child bilingual language development
Semantics and lexicon

Lexical development in simultaneous Basque-Spanish bilingual children

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Abstract

This presentation explores the lexical development in Basque and Spanish of children aged 12 to 30 months exposed to both languages from birth. Data have been collected using the MacArthur-Bates CDI questionnaires adapted both to Spanish (2005) and to Basque (2008). These data are compared to those from Basque and Spanish monolinguals extracted from the CDI corpora in either language.

Studies on simultaneous bilingual development have obtained a variety of results. Longitudinal studies on Catalan and Spanish bilingual children have shown that one of the languages may develop prior to the other and that the amount of vocabulary acquired is proportional to the degree of exposure (Juan-Garau & Pérez-Vidal, 2001). Studies applying the CDI questionnaires to Galician-Spanish bilingual children have shown that they perform better than monolinguals in Galician for lexical, morphological and syntactic production (Perez-Pereira, 2008). Data extracted from the Basque CDI, on the other hand, seem to indicate that production of Basque-Spanish bilinguals is similar to monolinguals in Basque, only if the amount of input received in Basque is above 60%. By and large, bilinguals seem to follow the same pattern of development as monolinguals but at different paces.

Pearson et al. (1995) proposed alternative ways of measuring bilingual development in order to compensate for methodological problems. These include the calculation of the total conceptual vocabulary by adding up the concepts produced in either language.Our study shows that higher exposure to one language will bring about greater proficiency in it and that lower lexical scores in one language will be counter-balanced by higher ones in the other. Thus, the combined conceptual development of bilingual children will be comparable to that of monolinguals. The study also highlights the importance of the CDI questionnaires as an instrument for evaluating bilingual children's total competence.

Cultural and social factors in child language development
Language, general

Monolingual and Bilingual Children's Preferences for Monolingual and Bilingual Speakers

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Abstract

Research has demonstrated that children prefer speakers of their own language. For example infants prefer to listen to their native language over a foreign language and young children choose same-language or unaccented speakers over speakers who speak another language or with an atypical accent unless that language/accent is associated with high status (e.g., Kinzler et al., 2007, 2012, 2013). Language is thus a strong cue to group membership; however, bilingual children have not been tested in these studies. The current studies examine bilingual and monolingual children's preferences for monolingual vs. bilingual speakers.

Method: 40 5-year-olds participate in both Study 1 and Study 2. In each study, half were monolingual English speakers and half were bilingual (English-French in Study 1, English-Spanish in Study 2). Eight pairs of adult faces were presented via computer. In Study 1, one face was matched with a voice speaking English and the other with a voice speaking English and Spanish or French. All presentation variables were counterbalanced including which language the bilingual voice spoke first. After watching each stimulus pair, children were asked which speaker they preferred to be friends with. Study 2 was identical to Study 1, except both languages paired with the faces were unfamiliar to participants (Russian and Korean).

Results and Discussion: As predicted, in Study 1 monolinguals chose (66%) the face paired with one language and bilinguals chose the face paired with two languages (75%) at rates above chance and significantly different from each other (p's < .05). Preliminary results from Study 2 suggest that while monolinguals choose speakers at chance levels, bilinguals are showing a trend to choose the face paired with two languages. These results will clarify whether bilingual 5-year-olds treat bilingual speakers as "in-group" members even when there is no overlap between the languages spoken by the child and the speaker.

First language acquisition
Semantics and lexicon

Spanish and Catalan 'ser' and 'estar' in early childhood

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Rosado, Elisa, Univesitat de Barcelona

Abstract

Spanish and Catalan have two copular verbs, 'ser' and 'estar', to convey what in other languages is expressed via a single copula so that the distinction between individual-level (IL) and stage-level (SL) predicates (Carlson 1988) is partially lexicalized. Becker (2000, 2004) observed that the copula was omitted in child English more frequently in SL predicates than in IL predicates. The existence of the two copulas leads us to wonder whether it acts as a facilitator or, on the contrary, turns out to be a source of difficulty. Though much has been said about Spanish copula acquisition in early bilingualism (Silva-Corvalan & Montarari 2008, Liceras et al 2011, for English-Spanish bilinguals; Arnaus-Gil 2013 for German-Spanish-Catalan trilinguals), there is a lack of studies on the production of copulas in monolingual Spanish (Sera 1992, Holteuer 2009) and even less in monolingual Catalan. We analyze the spontaneous production of six monolingual children, three Spanish and three Catalan children (1,8-2,8; CHILDES) to answer the following questions: 1) is the omission pattern attested in English replicated for Spanish and Catalan?, 2) does copula choice present a challenge for acquisition?

More than one thousand copular sentences were isolated and analyzed (564 for Spanish and 459 for Catalan); elliptical contexts were set apart from true copula omission. The results showed that (a) the omission rate is much lower than in English, (b) in Spanish the proportion of null copulas is negligible; (c) there is a non-trivial rate of copula omission in Catalan; (d) copula choice errors are rarely produced. We suggest that the distinction between copulas helps the child discriminate between semantic predicates in Spanish. Since the distinction is not fully transparent in Catalan, the course of acquisition is protracted, but not as much as in English, that has no such lexical distinction.

Other (please, specify in the box below)
Metalinguistic skills and social behavior regulation
Semantics and lexicon

Relationships between emotion definition and comprehension, empathy and moral disengagement in bulliyng

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Abstract

The literature has shown that people with hostile social attitudes have difficulties in understanding others. A possibile condition fostering aggressive reactions could be the difficulty in representing and analysing emotions mentally and verbally. A possibile moderator of hostile behaviors could be the capacity to define words, particularly emotional terms, since definitions represent a metalinguistic competence, based on the utilization of general, shared criteria of representing reality (Benelli et al., 2006)
In 117 children (44% Females) (range: 8;5-10;11 years), the relationship was analysed of the capacity to define different kinds of words according to a Definitional Scale (Belacchi & Benelli, 2007) with: 1. Comprehension of emotions (TEC individually administered); 2. Empathy ; 3. Prosocial/hostile roles; 4. Moral disengagement. These latter were self-report questionnaires collectively administered.
A significant increase of definitional competence as a function of age emerged. The results of correlational analyses, weigthed for age, evidenced:
- A positive correlation between definitions of terms referring to primay emotions and the meta-representational component of emotion comprehension (Reflect)
- A positive correlation between definitions of words, in general, and both the cognitive and affective components of empathy
- A negative correlation between definitions of all kinds of word and hostile roles, particularly in the bull's assistants. No correlation was found with pro-social roles.
- A negative correlation with moral disengagement: those children who tend to use more disengagement mechanisms are less able in defining words, particulatly the terms denoting secondary or relational emotions.
The first predictor was Moral disengagement; the second was definitional competence, followed by the Mental component of the TEC (Regression stepwise anlalyses)
Definitional competence, as an index of general meta-representational skills, is significantly related to other social competencies and relational behaviors in school-age children; particularly to emotion comprehension and reduction of hostile conduct.
Keywords: Metalanguage, definitional skills, prosociale/hostile attitude, emotion comprehension and regulation
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First language acquisition
Language, general

Communicative development through the age of two and a half years and the interrelations among communicative skills in Swedish children

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Abstract

In order to enhance the language development of children in need of support, parents and professionals need efficient methods to be able to provide useful stimulation. The present study was conducted to suggest a model for the development of communicative skills based on a longitudinal study of young Swedish children. Data were collected using the Swedish version of the MacArthur CDI. In the present analysis, 319 children were included in the age-span 12-18 months, 204 children at 18-24 months and 126 children at 24-30 months. We found the following significant correlations over time:
From 12 to 18 months we found a very weak correlation between gestures at 12 months and productive vocabulary at 18 months, as well as a weak correlation between productive vocabulary at 12 months and a syntactic measure at 18 months. Finally, there was a moderate correlation between children's productive vocabularies at 12 vs. 18 months of age. Receptive vocabulary scores at 12 months did not yield any significant correlations with either productive vocabulary or syntactic scores at 18 months.
From 18 to 24 months we found strong correlations between productive vocabulary at 18 months and syntactic scores at 24 months, as well as productive vocabulary at 24 months. We also found a weak correlation between the syntactic scores at 18 and at 24 months.
From 24 to 30 months we found a very strong correlation between children's productive vocabularies at the two ages, a strong correlation between the syntactic scores at the two ages and a weak correlation between productive vocabulary at 24 months and syntactic scores at 30 months.
Our results suggest a model that particularly stresses the role of children's productive vocabulary for early syntactic development, as well as the role of gestures in early development.

Cognition and language development
Semantics and lexicon

‘I know this is a mit!’: Children’s ability to use speaker certainty in learning novel words

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Abstract

‘I know this is a mit!’: Children’s ability to use speaker certainty in learning novel words
Recent research has suggested that children are particularly sensitive to characteristics of their interlocutor in learning novel words. For example, children are more willing to learn from previously reliable sources than from unreliable sources (Birch et al. 2008) and from knowledgeable rather than ignorant individuals (Sabbagh & Baldwin, 2011). The current study adds to this line of research by investigating whether speaker certainty and the particular manner in which this certainty is expressed is also an interlocutor characteristic that children use in word learning.
These questions were addressed by presenting 52 4-5 year-old Dutch children with a word-learning task in which two puppets each used the same label for a different novel object. In three conditions, puppets either expressed their level of speaker certainty lexically (‘I know this is a mit’ vs. ‘I think this is a mit’), they used discourse means to convey certainty (by expressing level of familiarity with the object: ‘I play with this a lot. Yes, a mit’, vs. ‘I’ve never played with this. Well, a mit’) or they combined the two. After each trial, children were required to point out the object that they thought corresponded with the novel label.
In all conditions, children were significantly more likely than chance to pick the object referred to by the more certain puppet as the referent of the new word (all p’s≤.044). Although children performed better in the combined condition (consisting of mental state verb and familiarity information), than in the other two conditions (M=5,7 out of 8 vs. M=4,7 and M=4,7), this difference was not statistically significant. This finding thus suggests that speaker certainty, be it conveyed lexically, through discourse or via a combination of the two, is a relevant cue to children, thereby confirming the crucial role of the interlocutor in the word learning process.
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Cognition and language development
Language, general

Cognition and Communication Development after Three Years of Cochlear Implantation in Children

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Abstract

Studies on the development of deaf children with cochlear implants (CI) emphasize variability in CI outcomes. This variability may be due to multiple factors, even when early implantation has occurred. We therefore proposed a study to investigate the links between cognition and communication development of deaf children with CIs after three years of implantation. A cohort of profoundly deaf children aged between 6 and 10 was recruited (n=25). Children were assessed with cognitive tests (visual attention, visual memory, audio-visual memory, narrative memory and planning) from the NEPSY (Korkman, 1997), and perception and language assessments (recognition of monosyllabic words, perception scale, receptive vocabulary and syntax, intelligibility). Results showed that in spite of a large variability, CI deaf children present visual (attention and memory) and planning skills which are near normal values or even slightly higher. However, results obtained with an audio-visual memory test (first name memory) or a narrative memory test, showed a tendency in CI children to have performances lower than normal hearing children. Audio-visual memory performance values were correlated with speech intelligibility. In addition we also observed a high correlation between performance values in the two memory tests and the lexical and syntactic comprehension scores. But the most important correlations seem to be the link between the family participation and the other proposed tasks: MANCOVA with family participation as covariable shows that this independent variable has an effect on all the dependent variables above. Those results involved in the success of CI allow us to reflect on other ways for rehabilitation.

Language development in atypical populations
Pragmatics

First mention a referent: a comparison of children with and without SLI in two dialogical activities.

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Abstract

Several studies have showed discursive difficulties in children with SLI, in comparison with typical children. For example, they tend to use inappropriate referential expressions for first mentions and/or subsequent mentions in a storytelling activity to a non-informed interlocutor (de Weck & Jullien, 2013). More generally, the central impact of settings and activities on children verbal production has been demonstrated (Thordartottir, 2008). Yet, no studies investigated the influence of setting variation on first mention of a referent used by children in interaction with their mothers. Thus, our research aims to study how do children with and without SLI express a new referent in two dialogical activities.
18 French-speaking mother-child dyads (9 with a child with SLI aged 6 to 7 and 9 with an age-matched TD peer) have been observed in two activities: a symbolic play (SP) and a joint reading activity with a wordless picture book (JR).
All first mentions of a referent produced by both participants were identified, and then the rate of first mentions produced by the children was calculated. Qualitatively, five ways to first mention a referent were distinguished: noun, noun pronoun dislocation, clitic pronoun, demonstrative pronoun and interrogative pronoun.
Our results confirm that setting variation has an impact on first mentions. In the SP children with and without SLI produced a similar rate of first mention whereas in the JR TD children produce significantly more first mentions than children with SLI. Qualitatively, both populations used a majority of nouns in both activities. However, in the SP children with and without SLI used forms absent in the JR: demonstrative and interrogative pronouns. Thus, children with SLI first mention less referents than their peers in the JR. However, qualitatively they seem to present a similar profile to TD children, in both activities, while interacting with their mothers.
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Quantitative and qualitative input factors
Phonetics and phonology

Patterns of VOT in infant-directed speech that are associated with language outcomes at 24 months

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Abstract

Little is known about whether articulatory changes in infant-addressed speech (IDS) can be associated with differences in children's early language outcomes (Liu, Kuhl & Tsao, 2003). We asked whether differences in maternal Voice-Onset-Time; VOT) during unstructured mother-child play with 18-month old infants (n = 16) could be differentiated from adult-directed speech; and/or be associated with variation in language outcomes 6 months later. Tokens were separated into open and closed class words, and the words in each group were then matched according to place of articulation, voicing, and sentence context. Sixteen mothers met inclusion criteria for providing sufficient tokens to analyze VOT in open-class words, and 10 mothers met criteria for closed-class words. Relative clarification of VOT was defined as proportion of voiceless stop tokens which fell within plus or minus 2 standard deviations of the mean VOT for voiced stop targets (Moslin, 1979). Total sample size was 764 tokens for analysis of VOT in open class words (382 IDS, 382 ADS), and 368 tokens for analysis of closed class VOT (184 IDS, 184 ADS).
Results: VOT overlap was significantly increased in IDS (M=10.416) compared to ADS (M=1.506) for the open class tokens (t=2.375, p=.031). Furthermore, there was no correlation between overlap of open class words and language outcomes. For the closed class tokens, there was no significant difference in overlap between IDS and ADS (t=.674, p=.517). However, degree of overlap for closed class words was negatively associated with language outcomes at 24 months of age, with mothers whose VOT values overlapped least having children with better language outcomes (r(8)=-.762, p=.01).
Findings suggest that children's progress in language acquisition may be aided by changes in speech clarity of closed class words in IDS, as measured by Voice-Onset-Time. How such clarification might aid early stages of language learning will be discussed.

Child bilingual language development
Morphology

Gender Marking on Hybrid Nouns: Strategies in the L2-Acquisition of German Gender Agreement by Children with Turkish or Russian as their L1

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Abstract

In German, neuter animate hybrid nouns such as Kind (child) or Baby allow gender agreement, either grammatical or conceptual, with the latter depending on the sex of the referent (NEUT vs. MASC, FEM). Which strategies are used in the L2-acquisition of German gender agreement on such nouns, particularly with regard to animacy being a strong possible trigger for strategy development?

The aim of the study was to obtain evidence on
a) possible preferences for agreement in either grammatical or conceptual gender according to the agreement hierarchy (Corbett 1991, 2006; Köpcke, Panther & Zubin 2010),
b) possible preferences for either the masculine or the feminine gender according to the marking of sex if the conceptual gender was preferred,
c) possible differences between the proband groups with different L1, given that children with L1 Russian know the grammatical category of gender from their L1 and therefore know gender agreement while children with L1 Turkish do not.
I will present data of 34 children aged from 8 to 10 with Turkish or Russian as their L1 and of a control group of the same age with L1 German. An elicitation task for articles, adjectives, and different types of pronouns (relative, possessive, personal) was used, which was performed three times during six months.
The results show that, in most cases, both L2-groups have already acquired grammatical agreement on hybrid nouns. However, in the case of conceptual agreement, the probands chose the masculine form for all target types in up to 95 per cent of the times. Taking also into consideration the results that were obtained from the same task with other nouns (animate but not hybrid nouns, inanimate nouns) I reason that the masculine gender is used to mark animacy and that this strategy is used independently of the speakers' L1 because it is followed by both L2-groups.

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Cognition and language development
Pragmatics

Referential choice in German children's because-clauses

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Abstract

Implicit causality (IC) is present when a verb highlights the participant given by the sentential subject as a probable source of the event's cause (1) or, alternatively, the participant in the sentential object (2). However, there are also verbs that don't exhibit any preference (3).

(1) Peterj frightens Tomk, because hej is clever.
(2) Peterj loves Tomk, because hek is clever.
(3) Peterj looks for Tomk, because hej/k is clever.

Current approaches on adult language relate IC to the causal structure of events and/or their expression in the verbal semantics (Bott & Solstad, subm.; Crinean & Garnham, 2006). If verbal semantics is the only source of IC-biases, they shouldn't be affected by other components. If the event's causal structure is the source, the strength of IC-biases should vary depending on presence/absence of relevant factors.

Some studies investigating IC in child language suggest an early acquisition of adult-like biases (Hartshorne & Snedeker, 2011). However, they checked only a few verbs (and languages). Moreover, the strength of the biases in different structures remained unknown so far.

In a series of reaction time experiments with German 5- and 6-year-olds, we test the impact of tense, negation and volition on the recognition of subject referents in because-clauses. The same paradigm has been conducted with adults. For all age groups, we found an impact of tense on referential choice. Temporal distance between cause and effect increases RT and erroneous referent choice for verbs showing subject-bias in non-distal constructions. With children, the strength and significance of this effect is verb-specific. Initial results on the impact of negation show similar effects. Hence, we hypothesize that IC-biases result from causal event structures learned by children as schemas (Schank & Abelson, 1977).

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First language acquisition
Morphology

Early comprehension of verb number morphemes in Czech: evidence for a pragmatic account

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Abstract

Question: Comprehension of verb number inflections appears to be a difficult task for children in various languages including English or Spanish. The goal of our study was to test whether this would also be the case in Czech, where children use grammatical morphology from the earliest age.
Method: The study examined 72 monolingual children aged 3;0 to 4;7. In a picture-pointing task, 20 items were presented. Each item contained a sentence and a picture pair that differed in the number of participants/objects involved. In ten items (five with a transitive verb, five with intransitive one) the subject was omitted. Of the remaining items, five included a lexical subject, and five contrasted the singular or plural object.
Results: Likelihood of correct response was evaluated using binomial mixed models as a function of age, grammatical number of the target sentence, and the sentence type. No significant effect of sentence type was detected, but there was a significant interaction between age and verb number. The comprehension of plural sentences was above chance from the earliest age observed. In singular sentences, children initially performed below chance level, but this improved with age and the success rate was above 80% for children at after the age of 4;6.
Conclusion: The findings suggest that the 3-year-olds have some knowledge of verb number, but still must acquire important aspects of the system. Moreover, the limitations in verb number comprehension may be related to developments in pragmatic understanding. Since singular sentences might refer to one participant in a multi-actor picture, the choice of the single-actor picture is not based purely on grammatical understanding, but on the pragmatic interpretation of the task (“choose the more appropriate picture of two possible ones”). This may explain the initially weak performance in singular trials.

Language development in atypical populations
Semantics and lexicon

Language Development in Children of Clinically Depressed and Nondepressed Mothers

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Abstract

We studied stability and continuity in mother-reported and experimenter-assessed language comprehension and production in children of depressed and nondepressed mothers from 15 to 24 months. Mothers diagnosed at 5 months as having had major or minor depression were recruited into a depressed group; the majority of mothers diagnosed as depressed at 5 months had full remission by 15 and/or 24 months, which requires a period of at least 2 months in which there are no significant symptoms of depression. Altogether, 46 depressed (54% with boys) and 111 nondepressed mothers (58% with boys) participated. Mothers averaged 32.8 years of age; there were no differences in maternal age or in marital status between the two groups. All infants were term, healthy, singletons with no known genetic disorders or birth complications. Infants averaged 5.16 months, 14.97 months, and 24.35 months at the three waves. Mothers completed the MacArthur Communicative Development Inventory (CDI; Fenson et al., 1991) and measures of social desirability and verbal intelligence, and infants were tested (blind to group status) with the Reynell Developmental Language Scales (RDLS; Reynell & Gruber, 2003). Children of mothers who were clinically depressed at 5 months, but have remitted by 15 months, show lower levels of language expression and comprehension which remained stable from 15 to 24 months. At 15 months, depressed mothers reported that their child understood fewer words than nondepressed mothers. At 24 months, experimenters rated lower levels of language comprehension for the depressed group than the nondepressed group. Experimenter report also showed a significant increase in comprehension from 15 to 24 months for children of nondepressed mothers, but not for children of depressed mothers.

Cultural and social factors in child language development
Pragmatics

The Language Attitudes of Dual-Language Latino Preschoolers

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Abstract

Language shift from Spanish to English occurs rapidly within immigrant Latino communities in the United States, and Latino children of immigrant families tend to undergo language loss upon school entry. Language attitudes are a major contributing factor to language shift and language loss. While language attitudes have been studied among many sociolinguistic groups and age ranges, research has not investigated the language attitudes that young Latino children in the United States have towards Spanish and English. The current study explored the language attitudes of dual-language Latino preschoolers towards Spanish and English using an adapted version of a matched guise paradigm that has been used with children (Rosenthal, 1974). Sixty dual-language, Latino children from a bilingual Head Start center participated in the study. Children were asked to listen to two puppets, one "speaking" an audio-recorded text in Spanish, and one "speaking" the same text but audio-recorded in English. Each text recitation was recorded by the same person, a fluent Spanish-English bilingual speaker. Next, children were asked a series of evaluative questions about the puppets (e.g., "Which puppet sounds nicer?") and were then asked to indicate which puppet was speaking Spanish and which was speaking English. Results showed that the significant majority of the children (72%) were able to distinguish correctly between Spanish and English, and further, that the significant majority possessed language attitudes that favored the English-speaking puppet over the Spanish-speaking puppet. Results are discussed within the sociolinguistic and socio-historical cultural context of the United States, which involves a majority-minority language dichotomy and unequal status balance between English and Spanish.

Cognition and language development
Syntax

Contrasting First and Third Person Perspectives in Language and False Belief

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Abstract

De Villiers (2007) suggests that the recursive structure of complement clauses supports children's understanding of False-Belief. In "he thinks it's raining", the main clause "he thinks" expresses a perspective on what is stated in the complement "it's raining", and this perspective differs from the speaker's own perspective. In the training studies that found correlations between children's understanding of complement clauses and False-Belief, the main clauses contained a 3SG subject, as in the example above (Hale & Tager-Flusberg, 2003). However, children frequently hear complements with 1SG subjects in the main clause (I believe it's raining) (Diessel, 2004). We investigated how children's interpretation of complement clauses with 1SG vs. 3SG subjects in the main clause correlates with False-Belief understanding.
We tested 64 English-speaking children aged 3;5 and 4;5. They saw two boxes. Two hand puppets indicated which of the two contained a sticker and how sure they were about this (e.g., I/he know(s) it's in the red box vs. I/he think(s) it's in the blue box). In the 1SG condition the puppets spoke for themselves; in the 3SG condition the experimenter spoke for them. In a between-subjects design, each child received eight trials and then took part in four standard False-Belief tests.

The 3-year-olds performed at chance in the 1SG and 3SG conditions and below chance in the False-Belief tests. The 4-year-olds performed above chance in both conditions and the False-Belief tests. However, only their performance in the 3SG condition, not the 1SG condition, correlated with their False-Belief understanding ($r=.651$; $p>.001$). This result was replicated with German-speaking children and it suggests that complement clauses with a 1SG subject in the main clause do not have the same meaning and/ or structure as complement clauses with a 3SG subject in the main clause. Only the latter support the ability to represent other minds.

Language development in atypical populations
Phonetics and phonology

Phonological growth in Dutch SLI. The effect of phonological intervention.

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Abstract

At Royal Dutch Kentalis in Eindhoven young children with severe phonological disorders are diagnosed and treated intensively in the Speech and Language Center. These children with Specific Language Impairment (SLI) are referred to Kentalis because their speech doesn't improve satisfactorily, despite regular speech and language therapy.
In this study 50 children with a phonological disorder are followed. A standardised method for phonological analysis of the Dutch language is used in order to determine the acquired grade of contrasts in phonological development. This method also shows the occurrence of phonological simplification processes.
Percentage of Consonants Correct (PCC, Shriberg and Kwiatkowski, 1982) and Phonological Mean Length of Utterance (PMLU, Ingram, 2002) are used as measures to examine the severity of the disorder and to examine whether specific phonological treatment is successful. Within a substantial subgroup the ability to produce grammatically correct and complex utterances and the ability to narrate the plot is analysed in a story generation task using the Frog story (Mayer, 1969). All children are tested twice, at the start of the treatment as well as 6 months after specific phonological treatment.
The current research focuses on the effectiveness of specific phonological therapy. The results show that most children grow substantially in their phonological skills. Significant results are found for:
grade of contrast, frequency of phonological simplification processes, PCC and PMLU.
It is also shown that growth in PCC coincides with growth in PMLU. Better phonological representations seem to lead to the use of more complex word forms. When a child's phonology grows it is able to use longer sentences and to tell more plot elements in narrating a story.
For children with SLI, specific phonological therapy leads to improved intelligibility. It improves the language system at both word and sentence level, leading to a better command of language.

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Quantitative and qualitative input factors
Language, general

Disfluencies in the input: correlations with child language outcomes

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Abstract

Typical disfluencies (pauses and hesitations) may signal increased formulation demand (Goldman-Eisler, 1958) and/or lexical uncertainty (Arnold, et al., 2004). Children appear to be aware of speech disfluencies and may use them as clues to intuit new vocabulary, at least in highly-controlled laboratory studies (Soderstrom & Morgan, 2007; Kidd, et al., 2011). Surprisingly, research is lacking on the nature of disfluencies in IDS and CDS, particularly in natural conversations, and over the course of early development. This is unfortunate, because patterns of disfluencies in IDS and CDS might relate to language-learning outcomes in children if infants and toddlers can exploit these patterns. Our research questions: 1) how does parental disfluency change over time? 2) does parental disfluency in IDS and CDS correlate with child language comprehension and production?
Methodology: Forty native-English speaking, typically-developing mother-child dyads participated. 15-20 minute unstructured mother-child play interactions at 11-months (IDS) and 24-months (CDS) were recorded and transcribed using CHAT and coded for disfluencies. We calculated the proportion of disfluencies in each sample. At 24 months, children were given the PPVT and EOW and parents completed the MCDI.
Results: Proportion of disfluencies was significantly higher in CDS than in IDS ($t = -2.79$, $p = .008$). Parental disfluency in CDS was correlated with children's receptive language skills (PPVT raw $r = .429$, $p = .006$). Parental disfluency was not significantly correlated with children's productive language (Expressive One Word Picture Vocabulary Test; EOWPVT raw $r = .121$, $p = .45$; EOWPVT percentile $r = .147$, $p = .36$; MCDI $r = -0.052$; $p = .76$). Parental disfluency in IDS was not significantly related to any child language outcome.
Conclusion: Our findings provide some support for the hypothesis that maternal disfluency signals new/more challenging vocabulary in the input and can have a positive impact on early child language outcomes.

Child bilingual language development
Semantics and lexicon

Activation of Semantic Information during Native-Language Processing vs. Second- Language Processing in Children

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Abstract

First-language (L1) processing is faster and more automatic than second-language (L2) processing. Additionally, children activate semantic information automatically in their L1, even on tasks not requiring semantic processing. The present study examined whether children automatically activated meaning during L2 syntactic processing.

Twenty-four monolingual English-speaking children and 24 bilingual children, who spoke Spanish as the native language and English as the second language, participated. The groups were matched on age (MAge = 8.50), gender, and nonverbal IQ. Language skills of all participants were within normal limits. A grammaticality-judgment task was used to examine activation of semantics during grammatical processing with 4 types of sentences: Grammatical-Meaningful (GM-Dora is sliding down the red slide); Grammatical-Meaningless (Gm-The pillow talks to itself every night); Ungrammatical-Meaningful (gM-Yesterday, the baby cry all night long); and Ungrammatical-Meaningless (gm-The car is sit on the house). The sentences in gM and Gm conditions contain incongruent semantic information while GM and gm sentences contain congruent semantic information. Thus, if children activate semantic information during syntactic processing, they should be less accurate on incongruent versus congruent sentences.

Monolinguals showed higher accuracy on the congruent sentences versus the incongruent sentences, $t(21) = 2.77$, $p = .01$. This suggests that semantic information was automatically activated during children's native-language processing. Bilinguals were overall less successful than monolinguals, $F(1, 42) = 1{,}332.98$, $p < 0.001$, $\eta p2 = 0.97$, and performed similarly on the congruent and incongruent sentences $t(21) = 1.81$, $p = .08$. That is, bilinguals did not show significant semantic-interference effects suggesting that they did not automatically activate semantic information when processing grammar in their second-language.

Together, these findings indicate that second-language processing differs from native-language processing quantitatively—L2 processing is less accurate than native-language processing, and qualitatively—L2 processing is characterized by lack of integration of semantic and grammatical information.

Other (please, specify in the box below)
Language learning in atypical populations
Morphology

Is specific language impairment specific to the language domain? Evidence from learning an artificial morphological rule

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Abstract

Whether SLI stems from a deficit specific to the language domain or from a deficit in the general domain is still of considerable debate. A recent theory attributes SLI to deficits in procedural but not in declarative memory (the two general systems responsible for long-term memory) (Ullman & Pierpont, 2005). Here we aimed at characterize the difficulties children with SLI (CSLI) experience in learning a linguistic task, and to investigate the role of the procedural and declarative memory systems in these difficulties. We followed for a long term (11-16 learning sessions) the learning process of an artificial morphological rule (AMR) in 10-year-olds CSLI and their TDC age-matched peers, measuring RT, percent correct and explicit verbal report concerning the rule. The AMR consisted of morpho-phonological transformation of Hebrew verbs expressing a semantic distinction whether the preceding noun was animate or inanimate. Participants were trained to judge and produce repeated and new (generalization) items of the AMR. Learning to apply the AMR to repeated items showed speed-accuracy trade-off - a typical characteristic of declarative learning. Generalizing the AMR to new items evolved separately for the phonological and semantic aspects of the rule. Generalizing the phonological aspect to new items demonstrated characteristics of procedural learning. Correct generalization of the AMR to new items was dependent on explicit discovery of the semantic aspect, and demonstrated characteristics of declarative learning. CSLI were inferior to TDC in learning all aspects of the AMR including those that were shown to rely on procedural memory as well as those that were shown to rely on declarative memory. The results suggest that CSLI may experience difficulties in learning all aspects of a morphological rule including its phonological and semantic aspects. Furthermore, deficits in the procedural as-well-as in the declarative memory system may explain some of the language difficulties encountered by CSLI.

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Child bilingual language development
Semantics and lexicon

Bilingual vocabulary delay and linguistic influence on language distribution: A Japanese-English diary study

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Abstract

Established findings demonstrate smaller vocabularies for bilinguals compared to monolinguals in each language (Akhtar & Menjivar, 2012). These studies primarily use averaged data from older children, overlooking subtle changes and language-specific influences. This study uses caretaker-kept diaries to capture step-by-step lexical acquisition from birth through 100 words in two Japanese-English bilingual sisters in the US. Our first hypothesis expected delayed acquisition compared to English monolinguals within their first 100 words, supporting systematic delay throughout development. Previous research also suggests distributed vocabularies in bilinguals, with some words in one language without equivalent in the other, but does not explain patterns of distribution (Oller, 2005). Japanese and English have distinct linguistic differences, particularly Japanese verb-dominance versus English noun-dominance. Our second hypothesis predicted greater prevalence of verbs in Japanese but nouns in English.

To evaluate delay, the age of lexical acquisition for words produced by each child was compared to the average age of acquisition for those words in the MCDI English database (Dale & Fenson, 1996). Matching predictions, both children lagged in separate language vocabularies compared to English monolinguals, and in total vocabulary. The younger sister's production was significantly delayed compared to her sister. To examine distribution, their translation equivalents were assessed, and vocabularies in each language were compared by parts of speech. Both children produced fewer equivalents than previous findings would suggest, possibly indicating a shift from more distributed early acquisition to greater overlap later. Although both children produced more nouns than verbs in both languages, the ratio of nouns to verbs was much higher in English, suggesting an importance for early noun acquisition despite strong linguistic influences. These findings provide insights into the earliest stage of productive vocabulary, demonstrating how early vocabulary needs may affect later vocabulary delays, and further indicate lexical distribution based on linguistic demands of each language.

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Other (please, specify in the box below)
New assessment tool for child L2 and L1 Mandarin Chinese
Semantics and lexicon

A NEW TOOL FOR ASSESSING CHILD MANDARIN RECEPTIVE VOCABULARY

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Abstract

It is increasingly common for children to learn Mandarin as a second language (L2) around the world. Yet, there are very few tools widely accessible to researchers and practitioners to assess L2 Mandarin proficiency of young children. As an initial attempt to document L2 Mandarin competence in Hong Kong (HK) preschool children, we constructed a tool to assess children's Mandarin receptive vocabulary.

Based on the early vocabulary inventory of Mandarin-speaking children in Beijing (Hao et al. 2008), the tool assesses comprehension of 98 words from 14 semantic categories. Children were presented with 4 pictures showing the target word, a phonological distracter, a semantic distracter, and an unrelated distracter, and were asked to point to the picture that matched a spoken word.

We report data from 1163 HK children (age 3-6, L1 Cantonese) who learn Mandarin as an L2. These children come from 4 input condition groups, which differ in the amount of Mandarin exposure time children regularly receive in school, ranging from 15-20 minutes to more than 150 minutes per week. We also tested 288 children in Beijing (age 3-6) who learn Mandarin as their first language (L1). Results indicate that input condition is the strongest factor influencing the test score ($p < .05$, effect size: 0.655), demonstrating that input quantity influences child L2 competence (De Houwer 2011). Error analyses reveal a significant interaction between distracter type, age group and input condition group ($p < 0.001$), with L2 and L1 children showing distinct profiles in how the distribution of error types changes across age. The tool offers researchers and clinicians a useful screening test and an alternative to parental checklists such as the Chinese Communicative Development Inventory (Tardif et al 2008) and the early vocabulary inventory for Mandarin Chinese (Hao et al. 2008) to assess receptive vocabulary competence in Mandarin.

[300 words]

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Literacy and language
Language, general

From reading the word to writing the word: full mediation of sub-character recognition skills in Chinese pre-school children

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Abstract

[Background]
Common sense and research (Ehri, 2000) both agree that, for pre-school children, learning to read a single word leads to learning to write it. However, little is known about what bridges these two skills, especially in the context of Chinese language development.
[Research Question]
This research intended to 1) confirm the path from oral vocabulary to print vocabulary and to writing vocabulary in Chinese pre-school children; and 2) examine if sub-character recognition skill mediates the path from print vocabulary to writing vocabulary.
[Method]
Measurement: Oral vocabulary was measured by the Mandarin Chinese version of Peabody Picture Vocabulary Test (PPVT); print vocabulary was measured by the Mandarin Chinese version of Communicative Development Inventory (CDI); writing vocabulary was measured by a free Chinese-character-writing task. The sub-character recognition skill was constructed by three indicators as measured by radical decomposition, radical memory and radical combination tasks.
Analysis: Firstly, a path analysis was conducted to confirm the path from oral to print and to writing vocabulary. Secondly, the latent variable of sub-character recognition skill was brought into the model as a potential mediator between print and writing vocabulary.
[Result]
Firstly, this study confirmed that, for Chinese preschool children, oral vocabulary predicted print vocabulary, while print vocabulary predicted writing vocabulary. Secondly, sub-character recognition skill fully mediated the path from the print to the writing vocabulary. The direct path became non-significant after the mediator was added.
[Conclusion]
This study concluded that preschool children learn to write from reading because reading enables the development of sub-character knowledge (e.g. rules for radical composition), which sets up the immediate foundation of Chinese character writing. This study suggests that future research and practice in helping Chinese young children with word writing should not only pay attention to word recognition at character level, but more closely at sub-character level and how the two levels combine together.
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First language acquisition
Phonetics and phonology

Acoustic Analysis of Lexical Tones in Mandarin Infant-Directed Speech and Infant-Directed Singing

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Abstract

Infant-directed speech (IDSpeech) and infant-directed singing (IDSing) are both common care-giving behaviors that can attract babies' attention(Trehub & Trainor, 1998). Studies demonstrated that exaggerated vowel space in IDSpeech may facilitate language acquisition in preverbal infants(H.-M. Liu, Tsao, & Kuhl, 2007; H. M. Liu, Kuhl, & Tsao, 2003). Mandarin Chinese is a tonal language and pitch height and contour manifest lexical tones. Lexical tones in IDSing may be modified by musical pitch, diminishing tonal differences and reducing perceptual differences of new words. It raises the issue whether IDSing facilitates word development in tonal-language learning infants. The goal of this study is to examine whether the acoustic features of lexical tones are distorted in IDSing, compared with other speech styles, i.e., adult-directed speech (ADS) and infant-directed speech.

The participants were 20 mother-infant dyads in Taiwan with infants around 6-12 months of age, and the speech samples were 642 tokens. The same XX bisyllabic words (= X vowels X 4 lexical tones) were used in each speech context as the target words. In ADSpeech recording, mothers talked with the experimenter. When recording IDSpeech, mothers introduced target words and matched pictures to their infants. When recording the IDSing, mothers learnt two new songs that included target words in lyrics and singed to their infants.

The acoustic analyses focus on four parameters of a target syllable: mean F0 (fundamental frequency), duration, pitch range, and relative turning point (RTP) [=(time of pitch direction change/tone duration)*100%]. The results show that pitch height and duration of lexical tones are exaggerated in IDSing than in IDSpeech, but F0 range is reduced in IDSing. In addition, the pitch contours of lexical tones in IDSing differ from IDSpeech. In conclusion, these results suggest that IDSing and IDSpeech play different roles in lexical tone and word learning in tonal language learners.

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First language acquisition
Syntax

Understanding object and subject wh-questions in Mandarin: contrasting passive BEI with BA forms

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Abstract

Economy of Derivation predicts the finding that subject questions would emerge in acquisition before object questions in English. However, intervention effects rather than distance may be responsible in that movement of an NP is more difficult across a like NP (Friedmann, Belletti, & Rizzi, (2009). In Mandarin wh is said to move covertly (Huang, 1982), at Logical Form. Do Mandarin subject and object wh-questions differ as a result of the differences in distance or intervention effects in this covert movement? Two highly similar surface syntactic forms (BA and BEI) in Mandarin allowed a subtle test of this. With BA sentences wh-subjects are in a higher surface position than wh-objects; the reverse is true for BEI.

144 3-6 year-olds were recruited from 8 preschools in Taiwan. Children received either logical subject or logical object questions with BA or BEI in a task in which they chose the answer from a pair of pictures testing that they understood the form of the sentence. A lead-in sentence before the question was either a BA form or a BEI form:

1) The horse BA the bird bit 2) The bird BEI the horse bit
(i.e. the horse bit the bird)

BA questions: Who BA the bird bit? (subject) versus The horse BA who bit? (object)
BEI questions: Who BEI the horse bit? (object) versus The bird BEI who bit? (subject)

The results demonstrate that surface position is irrelevant for accuracy on these questions in Mandarin, since children found wh-subject questions (i.e. agent, lower surface position) significantly easier than wh-objects for reversible action passives ($p<003$). For BA sentences, there was no significant difference for subject and object wh. These results contradict the results found in languages with overt wh-movement and suggest instead that the agent has special salience in the Mandarin passive for children.

New methods in child language research
Language, general

How the Speechome Recorder Can Change Our Understanding of Developmental Trajectories

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Abstract

Current longitudinal designs used by developmental researchers are limited, as intervals between data collection are large, and thus changes occurring during development may not be fully captured. Adolph et al. (2008), for example, found that sensitivity in tracking children's motor development dropped sharply when data collection intervals change from daily to 2-3 day intervals. Whether a similar effect is seen when examining development in language is investigated here.

We first tracked the development of future tense in one child, [Audrey], between the age of 33-37 months, using a novel device that can capture dense, daily video-audio recordings of adult-child interactions: the Speechome Recorder. A total of 34.14 hours over 36 sessions (M(length)=59.65 min) was recorded, transcribed, and then analyzed for uses of the future tense. We then extracted data from the complete set to reflect data collection at weekly, bi-weekly, and monthly intervals. Best-fit lines of the different trajectories of future tense uses were then compared.

Examining the complete data set, we find that Audrey produced three forms for the future: "going to" (106 instances), "will" (78 instances), and "I'm a" (e.g., "I'm a walk"; 72 instances). Both "going to" and "I'm a" trajectories were best-fitted with a cubic model while "will" was best-fitted with a quadratic model. Distortion of the developmental trajectories began to emerge with weekly sampling; the "will" trajectory became better characterized with a linear model and "going to" and "I'm a" with quadratic models. The most dramatic change occurred with the monthly sampling interval, where all three frames were best characterized with linear models.

Using intervals typically found in language development research distorted the developmental shape of all three future frames. This suggests that in order to accurately model language development, tools that allow for more dense data collection, such as the Speechome, may be needed.

Reference:

Adolph, K. E., Robinson, S. R., Young, J. W., & Gill-Alvarez, F. (2008). What is the shape of developmental change?. Psychological Review, 115(3), 527-543.

Child bilingual language development
Morphology

The role of frequency, morpho-phonology, L1 properties and L2 input in the acquisition of tense in English-speaking L2 children

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Abstract

Studies with sequential bilingual (L2) English-speaking children with fewer than three years of exposure have shown that their production of third person –s and past tense is influenced by word/lemma frequency, L2 vocabulary size, the stem's morpho-phonology and L1 properties (Blom, Paradis & Sorenson Duncan,2012;Blom & Paradis,2013). The effect of these factors in L2 children with more than three years of exposure has not been sufficiently investigated. The only study by Marinis & Chondrogianni's (2010) examined frequency and morpho-phonology and found only frequency effects in L2 children with the same L1 (Turkish).

The present study investigates the relative contribution of the above-mentioned factors in the production of third person –s and past tense in 46 6-to-8-year-old English-speaking L2 children with an average exposure of more than three years and two different L1s not yet examined, Polish (N=23) and Welsh (N=23). Welsh does not have an overt agreement marker on present tense lexical verbs; past tense verbs are highly regular. Polish has rich (ir)regular tense/agreement systems. The two groups were administered the TEGI (Rice & Wexler, 2001) and were matched on age, SES, L2 vocabulary and cumulative exposure (Unsworth, 2013), but differed in terms of bilingualism context (indigenous vs. immigrant). The Welsh-English children performed lower on third person –s than the Polish-English children; both groups had overall similar high accuracy on the past tense. However, in the error patterns with irregulars, Polish-English children showed sensitivity to frequency and morpho-phonology, whereas Welsh-English children overregularised across the board. L2 vocabulary predicted irregular verb accuracy in both groups.

These results argue for variable frequency, L1 and L2 morpho-phonology effects on the acquisition of tense in children with lengthier exposure to the L2 (cf. Blom et al.,2012). They are also discussed with respect to the differences in input quality and quantity in different bilingual populations.

Language development in atypical populations
Semantics and lexicon

The role of verb semantics in language production in adults, typical development children, and children with SLI: An eye movements study.

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Abstract

Twenty-five children with Specific Language Impairment (age 5;3 - 8;2 years), fifty typically developing children (3;3 to 8;2 years), and thirty-one normal adults participated in an eye-tracking experiment of language production that was designed to investigate how the knowledge of the semantic of the verb affects the perception and the production of depicted events. Pictures that depicted simple events were presented to participants while they have to describe them. The half of the events were in their original form (i.e. The cook cooks the chicken) and the other half in their role-traded form (i.e. The chicken cooks the cook). In addition, in the half of the trials, the spoken verb was provided to the subjects previously to the event visualization. Voice recordings were transcribed and parsed. Onsets and offsets of speech, subject nouns, and object nouns were measured for each picture description in addition to argument omissions. Moreover, eye movements registered to calculate the proportion of looks made by the participants to the subject and object picture referents for each condition. The results of speech and eye movements (correct and incorrect sentences and proportion of looks of the wrong visual referent) show that children with SLI are less accurate when inspecting and describing events. These results also suggest children with SLI present difficulties in inhibitory control.

Literacy and language
Phonetics and phonology

Predicting reading performance with a phonological input task. Evidence from Italian

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Abstract

Phonological clusters (sequences of consonants) repetition has recently been shown to be a reliable method to detect developmental reading difficulties (Marshall and Van der Lely, 2009). Difficulties with clusters repetition correspond to reading problems, but it is not clear if clusters can be used to predict reading performance also in Typically Developing (TD) children. Further, repetition performance is informative about output representations, but it is not informative about the link with input representations. In this study a specifically designed task addresses these questions. Thirty-three Italian children aged 8;3 to 10;1 were asked to complete an input task and an output task based on the use of trisyllabic non-words containing phonological clusters. The input task was a minimal pairs discrimination task, while the output task was a non-words repetition task. Syllables containing clusters were manipulated on stress (they could be stressed or not) and on position (they could be word-initial or word-medial). The results show that both the performance in the input and the output tasks correlates significantly with reading performance. The correlation between input task and reading led to a medium/large effect size, r =.410, and it was highly significant, p = .009 one tailed. The correlation between output task and reading led to a medium effect size, r =.305, which was significant, p = .04 one tailed. In the input task reaction times (RTs) were also measured. Analysis on RTs show that only unstressed syllables are contributing significantly to the model, and that there is no word position effect. Overall the results show that it is possible to predict reading performance using phonological input tasks and they suggest that the phonological problems with clusters of children with reading difficulties may start as input representation problems and then extend to the output.

Marshall C. R. , Van der Lely H. K. J. (2009), Effects of word position and stress on onset cluster production: evidence from typical development, SLI and Dyslexia, Language, 85, 39-57.

First language acquisition
Pragmatics

The Role of Gaze as Turn-allocational Technique in Spanish-speaking Child-adult Multiparty Conversations

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Abstract

The distribution of turns is the central concept within the turn-taking system. Analysing how participants employ diverse nonverbal "turn signals", such as gaze, with the purpose of directing their speaking turns is an utmost importance in face-to-face interactions. The present poster deals with the way in which Spanish-speaking early age children use gaze in multiparty child-adult conversations. To this end, we have developed a qualitative analysis focused on the use of real data (face-to-face conversations recorded in 5 Spanish nursery schools) following an ethnomethodological approach. A total of 60 transcripts have been examined for this study in which participate 5 adults and 36 children aged from 3;0 to 4;6 years, retrieved from the Koiné corpus included in CHILDES system.

Our results indicate that children from this age are able to recognize and use gaze as a turn-allocational technique (Lerner, 2003) in multiparty child-adult conversations. Firstly, we have observed that children notice when the speaker is selecting them as the next potential speaker by addressing the ongoing turn through gaze direction. Moreover, children are able to employ their own gaze in order to select a next speaker when they emit a turn. We have also perceived that children show their attention as listeners by looking frequently at the speaker while he is talking. These examples let us to consider that children´s gaze could be understood as generic listener responses (Bavelas, Coates & Johnson, 2002), which could work as nonverbal proto-backchannels in this type of interaction.

To conclude, gaze plays a relevant role in face-to face interactions since early childhood. However, studying its function is not only important in pre-verbal stages, but also analysing its role as a nonverbal device used by speakers to coordinate the distribution of turns is fundamental to understand how the turn-taking system works in child-adult multiparty conversations.

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Child bilingual language development
Language, general

Input characteristics and language development in English-Spanish dual language-learning toddlers

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Abstract

This study examined whether characteristics of caregiver language input to dual language-learning toddlers are linked to language development. Previous studies have indicated that the amounts of each language that children learn are associated with the amounts they hear in each language (e.g., Pearson et al., 1997), but few studies have examined whether language learning is also associated with how both languages are used by individual caregivers. In one study, no association was found between overall language development and whether individual caregivers spoke to the child in only one language or both languages (DeHouwer, 2007). In another study, infants exposed to mixed input developed smaller vocabularies at 18 and 24 months than those not reported to hear mixed input; however, this study only measured development in one language (Byers-Heinlein, 2012). In the present research, we examined measures of both languages (English and Spanish) of 36 bilingual toddlers at three ages between 20 and 30 months, in relation to information about the input. Questionnaires recorded how much time the toddlers spent with various caregivers, and how each language was used in those interactions. The MacArthur-Bates Communicative Development Inventories (CDI) were collected at the three ages, and spontaneous speech samples were collected in each separate language and in a mixed language condition at 25 and 30 months. Analyses that took learning in both languages into account (composite CDI scores; total number of different words and MLUs from the mixed language samples) did not yield evidence that mixed input was associated with slower development than separated input. Language mixing in the input was associated with lower Spanish - but not English - scores at 30 months, but not at younger ages, possibly reflecting a shifting of language dominance toward English rather than a negative impact of mixed input on dual language learning.
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De Houwer, A. (2007). Parental language input patterns and children's bilingual use. Applied Psycholinguistics, 28, 411–424.
Pearson, B. Z., Fernandez, S., Lewedag, V., & Oller, D. K. (1997). Input factors in lexical learning of bilingual infants (ages 10 to 30 months). Applied Psycholinguistics, 18, 41-58.

First language acquisition
Language, general

Does prosody disambiguate homonym senses in child-directed speech?

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Abstract

In natural first language acquisition, children learn phonemic sequences that have multiple, unrelated senses. However, they often struggle to do so in experimental contexts (e.g., Mazzocco, 1997), leaving the mechanism for homonym acquisition somewhat unclear. Previous work on homonym acquisition has focused on metalinguistic awareness of homonymy (e.g., Doherty, 2000) and on how children cope with having the two senses of the homonym in direct competition (e.g., Backscheider, et al., 1999). One cue that children may use to resolve homonymy is prosody. When adults pronounce homophonous words, they differentiate between senses using duration (Gahl, 2008). The less frequent sense of the homophone is longer in duration than the more frequent sense. The present study asks whether similar cues to multiple senses are available in child-directed speech. If they are, children may use such cues to differentiate two senses of homonymous words. Homonymous words used in both senses were extracted from the maternal speech in the Providence Corpus (Demuth, et al., 2006). These words included ate/eight, close/clothes, knew/new and right/write. These word types were chosen because they appeared at least 10 times in both senses in speech to multiple children. Each token was measured along three dimensions: token duration, pitch range and vowel quality (first and second formants at the midpoint of the vowel). Pitch range and vowel quality do not differ based on sense ($p>.2$ for all comparisons). Statistically significant differences in token duration were found for some homonym pairs for some mothers, but not for all cases. To determine whether such distinctions might be reliable enough for a learner to use, additional analyses are examining the role of lexical class, frequency and contrastive use in producing such differences. Although they are available in adult-directed speech, durational cues to multiple senses of homonyms may not be available to language learners.

Child bilingual language development
Language, general

Phonetic properties of nonnative input affect bilingual children's vocabulary development

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Abstract

It is well established that the rate at which children acquire language depends on the quantity and quality of their language exposure, e.g. Hoff, 2006; Huttenlocher et al., 2010; Rowe, 2012. Recent studies suggest that the quality of non-native language input may be less supportive to language development than native input (Paradis, 2011; Place & Hoff, 2011). Native and nonnative speakers of a language may differ in quantity of input they provide to their children in a particular language, but it is also expected that they differ in aspects of quality, particularly in their pronunciation in their non-native language. This study focused on the phonetic properties of the English child-directed speech of a sample of 15 native speakers of Spanish living in the U.S.,who report they regularly speak to their children in English. We asked what types of phonetic errors nonnative speakers of English produce in their child directed speech, and whether the parents' pronunciation accuracy in English is related to their child's vocabulary size in English at 30 months.

Phonetic properties of the adult speech were analyzed using conversational samples of mothers playing with their children. Measures of phonetic accuracy were based on accuracy of phonemes, vowels, onsets, codas, and whole words selected from content words in the language samples. Parent lexical diversity was measured using number of word types from the language samples. Children's vocabulary size was measured in English and Spanish at 30 months using the MacArthur-Bates CDI and the Spanish counterpart, the Inventario del Desarrollo de Habilidades Comunicativas (IDHC).

Overall, parents were most accurate at producing onsets, and least accurate when a whole word measure was used. Parents' phonetic accuracy was related to child vocabulary size in English and to the parent's number of word types used. Regression analysis showed that phonetic properties of the parents' speech accounted for variance in child vocabulary size even after the parent's lexical diversity in the language sample was accounted for. This study suggests that phonetic accuracy is likely an index of speaker proficiency, and that nonnative pronunciation may affect child language learning.

Child bilingual language development
Language, general

The relationship between exposure to code-switching and vocabulary skills in bilingual children

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Abstract

There is strong evidence for a relationship between the extent of language input in the home and vocabulary growth in children, both monolingual and bilingual. Language input experienced by bilingual children is likely to include exposure to code-switching. There is limited research exploring the influences of parental code-switching on language development in bilingual children. The current study examined whether the extent of parental code-switching influences vocabulary development in English and Spanish in Spanish-English bilingual children.

The participants were 25 bilingual Spanish-English children ages 5-7 years. Children's primary caregivers were administered the Multilingual Inventory of Code Switching – a self-report of code-switching behaviors. Based on the amount of daily code-switching reported by the primary caregivers, children were split into two groups. Children in the low code-switching group (n=13) were exposed to code-switching in the home for 1 hour or less; children in the high code-switching group (n=12) were exposed to code-switching for 2 hours or more. The two groups were matched on age, non-verbal IQ, SES, and primary caregivers' L1 and L2 proficiency.

Children's receptive and expressive vocabulary in English and Spanish were assessed using standardized measures. Independent-samples t-tests yielded no statistical differences in English receptive and expressive vocabulary measures between the two groups. However, the children in the high code-switching group demonstrated higher Spanish receptive and expressive vocabulary scores than the children in the low code-switching group.

The results suggest that regular exposure to code-switching in the home does not adversely affect the development of English vocabulary skills in bilingual children. Further, it appears that exposure to code-switching may be beneficial to the development and maintenance of Spanish. Future work will need to increase sample sizes and to carefully document children's performance on other language measures in order to confirm these findings.

Cognition and language development
Language, general

Executive functioning in children with SLI

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Abstract

There is an accumulating body of evidence identifying problems in executive functioning in children with SLI. The majority of studies investigating executive functioning have been using performance-based tasks. Children's task performance may not be fully representative for their everyday life. Therefore, it is important to evaluate the executive functioning of children with SLI in more naturalistic environments, as well. In this study parent and teacher perceptions of the executive functioning of a clinical sample of primary school children with SLI were investigated (n=225). The Behavior Rating Inventory of Executive Functions (BRIEF; Goia, Espy & Isquith, 2003) was used. The PPVT was administered to document their receptive vocabulary skills. Also, a performance-based test on working memory was used. The results showed that the children with SLI have more EF-problems in everyday life compared to an age and gender matched control group. EF-problems were found to be worse in the school environment than at home. Mean index-scores on Working memory and Initiate were above the borderline range. Teachers rated 63 % of the children with SLI in the clinically significant range on Working Memory. In contrast, parents rated only 13 % of the children having WM-problems in the clinical range. A weak correlation was found between the observation scores and the performance based WM-test which is in line with earlier findings. Detailed, in-depth information is provided on the high Initiate index-score with an eye on clinical implications. Children with SLI might well be rated as poor on some items of the BRIEF not because of an EF impairment, but because of their linguistic deficits.

Quantitative and qualitative input factors
Language, general

Why does parental language style predict child language development? A twin study

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Abstract

Adults modify their speech when speaking to children (e.g., simplification, semantic contingency, interactive quality), and these modifications, along with quantity of child-directed speech, have been shown to be associated with children's rate of language development, although controversy continues over the specific effects of these modifications. Whatever their theoretical perspective, most researchers have assumed that these structural and functional aspects of language input to children constitute an exogenous aspect of children's experience.

In contrast, twin studies have discovered that many nominally environmental features (such as parental warmth and discipline) are in fact correlated with children's genotype. This may occur because parent and child behaviors may reflect their shared genotype (passive gene-environment correlation), or because different child characteristics evoke different responses from parents (evocative GE correlation), or because children can actively determine their environment (active GE correlation). This phenomenon has been little studied in language development.

In the UK-based, population-representative Twins Early Development Study, parents of 3-year-olds completed a brief questionnaire about verbal interaction with each twin. Responses were aggregated into corrections-orientation and language-stimulation factors. Child language was assessed at ages 3 and 4 using adapted MacArthur-Bates CDIs (N>8000), and at age 4.5 (N~900) using researcher-administered tests. The phenotypic correlations among the measures (all significant):

	CDI-3yr	CDI-4yr	In-home-4.5yr
Corrections-orientation	-.082	-.065	-.097
Language-stimulation	.276	.272	.255

Intraclass twin correlations yielded heritability estimates for variation in corrections-orientation to be .40, and for language-stimulation, .32, suggesting moderate genetic influence on both these aspects of language input. This is consistent with evocative gene-environment processes, found in other domains, in which children influence parents, just as parents influence children. Multivariate twin analysis of these data in progress will determine how much of each correlation is due to shared genetic influence on the two variables and how much is due to shared environmental influence.

Child bilingual language development
Phonetics and phonology

EFFECTS OF DEVELOPMENT ON CROSS-LANGUAGE SPEECH PERCEPTION

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Abstract

The present study tested infants from English-speaking homes to examine effects of development on cross-language speech perception. Werker (1981) showed that 6-8-month-old infants are able to discriminate non-native speech sounds that adults cannot discriminate, but by 10-12 months the infants were no longer able to make the discrimination. According to Kuhl (2008), this decline in discrimination is due to infants' increase in native-language exposure, which leads to "neural commitment" to the native language at this age. Many studies have shown a decline in discriminatory abilities of infants for non-native contrasts between 6 – 12 months of age but no study to date has tested a contrast in affricates in a cross-language perception test. Also, very little attempt has been made to show whether the experimental order of presentation of stimuli affects infants' performance. An aspirated – unaspirated contrast of Urdu /tʃ / - /tʃh/ was selected based on a pilot study with 20 English-speaking adults who were tested on a number of Urdu contrasts not found in English to identify the most difficult. Twenty-four 7- and 11-month olds were tested in a habituation procedure. Half of the infants were habituated to the voiceless aspirated affricate and tested on the contrasting voiceless unaspirated affricate while the remaining infants experienced the reverse pattern. Discrimination was assessed by comparing mean looking time during the last two habituation trials to mean looking time during the first two trials of the test phase. In agreement with the literature, the results indicated that 6-8-month-olds could discriminate the affricate pair but 11-month-olds could not. Infants presented with the non-prototypical consonant (the aspirated affricate, which does not occur in English) in the habituation phase showed better discrimination in the test phase than the infants presented with the prototypical consonant in the habituation phase.

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First language acquisition
Phonetics and phonology

Lexical versus Phonological Factors in Spontaneous Vocalizations and Early Word Forms

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Abstract

The growing lexicon is often assumed to be the principle factor that determines underlying phonological characteristics of words, as produced by typically developing children over four years of age (Beckman et al., 2007). However, the precise relationship between characteristics of the lexicon and phonological variables in children's productions at the earliest onset of word use has not been frequently studied (see Sosa & Stoel-Gammon, 2011).
Theories of 'selection and avoidance' (e.g. Schwartz et al., 1987) suggest that at the early stages of word production, phonological rather than lexical factors may direct the word types children attempt. This issue is not only interesting because it provides insight in language acquisition mechanisms, but the interaction between these factors is important to consider when planning clinical intervention protocols for older children functioning at the earliest period of word use.
We studied three different speech output patterns of six English-learning children (8-36 m.o.) over a period of two years. Speech samples and corresponding MacArthur-Bates CDI vocabulary checklists filled out by caregivers were collected bi-weekly in the children's homes. We investigated (1) patterns of Words on the CDI lists that children were reported to produce (W-CDI data); (2) patterns of spontaneous Words children Attempted to produce (W-AT data); and (3) (rarely available) patterns of the same children's early Spontaneous Vocalizations ('babbling') with no clear word target (SV data).
We present growth model analyses (cf. Rispoli et al., 2009) of individual children's patterns relative to consonant place and manner, and vowel height and backness. We find abrupt drops in the number of SVs produced, correlated with increases in number of W-ATs and SV diversity. Results show more phonological diversity for W-CDI and W-AT compared to SVs, with little evidence for selection or avoidance: lexical factors appear to dominate even in this early period of children's development.

First language acquisition
Syntax

Directionality of language change and acquisition of relative clauses in Brazilian Portuguese

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Abstract

This study focuses on the acquisition of relative clauses by Brazilian-Portuguese-speaking children based on a sentence-repetition task as proposed by Diessel and Tomasello (2005). Children acquiring relative constructions in Brazilian Portuguese (BP) are submitted to a variable input in which standard piedpiping relatives alternate with a resumptive pronoun strategy, which involves no gap, but the maintenance of the preposition in situ followed by a resumptive pronoun of the relativized Noun Phrase, and a Prepositional-Phrase-chopping strategy, in which the preposition and the relativized NP are absent. Standard subject and direct object relatives only alternate with the resumptive pronoun strategy. According to Tarallo (1983), standard piedpiping clauses have been replaced by PP-chopping clauses, hence, the acquisition of relative clauses in BP involves not only gradual incorporation of even more complex grammatical patterns as in German and English, but the acquisition of the variants as well. Considering that structural similarity to simple sentences plays a role in the acquisition of relatives and considering the observed change in BP, 78 stimuli were constructed according to two conditions: the relative type (subject, direct object, indirect object, adverbial and genitive) and the variant of the stimulus (standard, resumptive pronoun strategy and PP-chopping), controlling for structural, semantic and pragmatic factors. Forty seven children from four to seven years old were asked to repeat the stimuli, which were distributed in three equivalent lists. Each child was exposed to the same conditions, but not to a different variant of the same sentence, and repeated 26 test-clauses and 9 fillers. ANOVA revealed the effect of relative type, variant and age. Children presented highest levels of accuracy repeating subject and direct object standard relatives and PP-chopping variants, except for genitives. This behavior indicates that structural similarity influences the acquisition process together with reflecting the observed change in BP.

First language acquisition
Phonetics and phonology

Templates in the phonological development of Brazilian children

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Abstract

This study investigates the manifestation of templates in phonological development and follows the dynamic perspective of development and the Whole-Word/Templatic Phonology in the analysis of child data.

Dynamic Systems Theory (THELEN; SMITH, 1994) understands language development as a process of evolution (DE BOT, 2008) as language is understood as a cognitive skill that depends on motor and hearing skills, specially, on the environmental stimulus (VIHMAN et al., 2008). Whole-Word/Templatic Phonology proposes that the organizing principle in early phonological development is the word, which would explain the unusual phonological substitutions found in early data. These substitutions are guided by a template, i.e. a systematic pattern which facilitates the expansion of the lexicon.

This work studies the manifestation of templates by analysing longitudinal data of three male children: (1) M. 09 – 2;0, 16 sessions/months, 1975 tokens; (2) A. 09 – 2;0, 16 sessions/months, 687 tokens; (3) G. 0;10 – 2;0, 15 sessions/months, 939 tokens. Tokens consisted of selected and adapted words.

We observed variability between the subjects regarding the type of template:

M: i. reduplicated (C1V1.ˈC1V1 e C1V1.ˈC1V2)
ii. CV

A: i. reduplicated (C1V1.ˈC1V1 e C1V1.ˈC1V2)
ii. V.ˈCV
iii. ˈV.CV
iv. ˈC1V1.C2V2

G: i. CV
ii. reduplicated (C1V1. ˈC1V1 e C1V1. ˈC1V2)
iii. ˈV.CV
iv. C1(velar)V1. ˈC1(velar)V1 e C1(velar)V1.ˈC1(velar)V2

In addition to the variability, it was observed that moments of use and disuse of templates vary from child to child.

We conclude that there are templates operating in the variability in phonological development. Distorted words result from the manifestation of a template. In moments of instability, templates are formed due to the principle of self-organization, namely the spontaneous formation of patterns. The system organizes itself due to its inherent ability to find patterns from some type of interaction. In dynamic terms of development, it is noted that the order arises from the variability.

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Child bilingual language development
Language, general

Child directed speech in bilingual families: A longitudinal study of maternal language choice

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Abstract

An important aspect of input to young bilingual children concerns the language(s) parents speak to them. Parental language choice may vary across time or may remain stable. Changes over time may lead to changes in the absolute and relative frequency of language input. Stability in language choice may be affected by whether children are speaking or not, and whether children actually speak the language addressed to them.
This longitudinal study explores stability in maternal language choice and its relation with children's speech status.
25 mothers and their children were the participants. Children were first-born and growing up in bilingual middle-class families from birth. At the time of recruitment mothers reported that children heard French from one parent and Dutch from the other. About half of the mothers reported addressing their children in Dutch.
Data are based on maternal reports and on mother-child interactions videotaped when children were pre-verbal (5 months), producing words in both languages (20 months), and fluent speakers (48 months). At 48 months some children spoke only a single language. Most mothers spoke the same language to their children throughout. Thus, speech status did not affect language choice. However, child directed speech at 48 months included a second language for 2 mothers who had previously used only a single language, and one mother switched to another language entirely (her child spoke only the language she had switched to).
The finding of overall stability in maternal language choice in bilingual families implies that like monolingual children, bilingual children have the benefit of receiving cumulative maternal input in a particular language (or in two, as the case may be). Future investigation of children's language use will need to clarify whether this cumulative input is sufficient to support receptive and productive language skills in two languages.

Language development in atypical populations
Syntax

Sensitivity to Morphosyntactic Cues in Children with Specific Language Impairment

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Abstract

Preschool children with specific language impairment (SLI) exhibit weakness in the use of grammatical morphemes expressing tense and agreement (T/A). A new account proposes that T/A inconsistency stems from children's failure to understand the structural dependencies that hold within certain types of sentences in the input. These sentences contain a nonfinite subject-verb sequence which is allowed because finiteness is expressed in a verb appearing earlier in the sentence (e.g. We saw her running; Is she crying?). Failure to grasp these dependencies may lead children to extract nonfinite subject-verb sequences (she crying) and mistakenly base new utterances on these.

This study addresses the role of receptive processing in our proposal by asking whether typically developing (TD) children detect and use early-appearing finiteness (T/A) information in their on-line comprehension whereas children with SLI do not. Such a difference would provide support for the claim that children with SLI fail to grasp the significance of this information in constraining the form of later-appearing subject-verb sequences.

Using the looking-while-listening paradigm, children's eye movements were recorded while they viewed two drawings (one girl; two dogs) and heard a sentence in one of the following conditions:

a. Hey! || Are the nice little || dogs running? (finite-cue)
b. Hey! || See the nice little || dogs running? (no-finite-cue)

Proportion looking to the target was computed for each 33-ms frame in the regions of the T/A morpheme and the noun. Initial findings bear out the predictions. TD children showed a significant effect of cue in the region containing T/A information. Children with SLI showed no difference between conditions in this region. However, after encountering the noun, accuracy rose significantly, showing that they were responding to the task appropriately. The significance of these findings for the overall proposal (including SLI cross-linguistically) and for intervention will be discussed.

Language development in atypical populations
Language, general

Language and memory abilities of internationally-adopted children from China

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Abstract

Internationally-adopted (IA) children experience abrupt termination in L1 acquisition and delayed onset in acquisition of their new language at a time when the neuro-cognitive substrates for language learning are becoming fine-tuned, two important risk factors for language acquisition. Indeed, recent longitudinal research has shown that, in comparison to non-adopted children matched on socioeconomic status (SES), IA children from China adopted by French-speaking families before 24 months of age and assessed repeatedly between 2 and 8 years of age exhibited normal cognitive and socio-emotional development, but had significantly lower scores on vocabulary, grammar, and sentence recall (Delcenserie, Genesee, & Gauthier, in press; Gauthier & Genesee, 2011). The present study examined whether these lags would resolve with greater exposure to French and if IA children exhibit difficulties with memory. Thirty French-speaking Chinese adoptees (9;0-12;5 years of age) were assessed and compared to 30 monolingual non-adopted control children (CTL) matched for age, gender, and SES using a battery of tests of cognitive and socio-emotional development and language and memory abilities. The groups did not differ on non-verbal IQ, socio-emotional development, non-verbal short-term (STM) and working memory (WM), but the adoptees scored significantly lower than the CTLs on vocabulary, grammar, fluency, verbal STM, WM, and long-term memory. These results indicated that the adoptees continued to exhibit significant lags in language, indicating that their language difficulties did not decrease with more exposure to French. They also exhibited significant lags in verbal but not non-verbal memory, suggesting that their memory difficulties are specific to verbal material. Regression analyses revealed further that the IA children's language scores were best predicted by their verbal STM abilities. We hypothesize the IA children's delayed exposure to the adopted language and/or attrition of the birth language may result in long-term verbal memory lags, which underlie their language lags.

Sign language acquisition and gestures
Semantics and lexicon

Manual Activity and Words in Babies Exposed and Not Exposed to Baby Sign

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Abstract

Support for Baby Signing (BS) with hearing infants tends to converge toward three camps. Those who advocate BS to advance infant language, literacy, behavioral and cognitive development rely heavily on anecdotal support and social media to propagate their claims. Those who advocate BS as an introduction to another language, such as American Sign Language (ASL), promote early bilingual language learning. A third group warns against BS, emphasizing that it competes for attention to and potentially delays spoken language acquisition in hearing infants. This study compared infants exposed versus those not exposed to BS in an attempt to determine if there was any difference in either manual activity or indices of language advance.

We analyzed videotapes of 16 infants from 9 through 18 months of age; eight had been exposed to BS and eight had not been exposed to signing (NS). We compared their manual activity to reveal no differences in the quantity of manual activity accompanying vocal activity and no qualitative differences in the handshapes used during manual and vocal activity. More babies in the BS group reached the 4-, 10-, and 25-word point (number of words identified in a 30 minute observational session) than babies in the NS group, but the differences were not statistically significant. In addition, monthly lexical growth (both production and comprehension) from 12 to 18 months did not reveal signing to have an impact on vocabulary acquisition.

These findings points to a tight relationship between manual and vocal activity in all 16 babies, a relationship that aligns with previous work on gestural and vocal development. Failure to find a statistical difference between the two groups' development of words, however, calls for temperance in promoting claims that Baby Signing advances early word learning and cautions against claims that Baby Signing interferes with word learning.

Language development in atypical populations
Language, general

"The Syndroling Project": a comparative linguistic analysis of typical development profiles and neurodevelopmental genetic syndromes (Down, Williams and Fragile X syndromes)

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Abstract

The study of neurodevelopmental genetic disorders highlights the complexities underpinning the relationships between genes, brain and behaviour. Inter-syndrome comparison has led to the discovery of dynamic profiles of cognitive and linguistic development far beyond a static condition determined by standardized intelligence measures (Karmiloff-Smith, 2007). Analysis of atypical trajectories in language development is crucial to determine differential areas of proficiency and disability for each syndrome, as well as to adapt intervention to varied developmental contexts and stages. However, few studies have been conducted based on conversational corpora.

In this poster we aim to present a new project: "The Syndroling Project" (TSP), involving researchers from several Spanish and international universities. The TSP bases its methodology on the CHILDES Project, attempting to establish linguistic profiles of typical development at the phonological, morphosyntactic, lexical, and pragmatic levels from a corpus of 60 typically developing children. Typical development profiles will be then compared with the profiles obtained from corpora of three neurodevelopmental syndromes: Down syndrome, Williams syndrome, and Fragile X syndrome (12 subjects each). Profiles will be built on specific categories for each level of analysis, conducting cluster analyses in order to identify the modal homogeneous characteristic profile of the groups.

Preliminary results indicate that profiles of language development are syndrome-specific. WS shows relatively good levels of vocabulary and grammar, and an accelerated trajectory of phonological development. Down syndrome exhibits specific disabilities in phonological and grammatical processes in the context of a growing vocabulary and pragmatic adequacy. Fragile X syndrome would represent an intermediate profile when compared with DS and WS, with strong-growing semantic abilities in the context of weak morphosyntactic and pragmatic outcomes.

The Syndroling Project is the first attempt to compare Spanish-speaking subjects with DS, WS, and FXS with typically developing subjects at all levels of linguistic analysis, and based on conversational corpora.

Karmiloff-Smith, A. (2007). Atypical Epigenesis. Developmental Science 10, 1, pp 84–88.

First language acquisition
Semantics and lexicon

Noun and predicate acquisition are different: evidence from input frequency and neighbourhood density

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Abstract

Between 16 and 30 month old, there are a lot of inter-individual differences in toddlers' lexicons. A number of studies have tried to explain this high variability by many different factors such as Input Frequency (IF) and Neighbourhood Density (ND).
For IF, Goodman, Dale & Li (2008) showed its important role on language acquisition but with a different weight according to word category and time. For ND, Storkel (2004) demonstrated that ND had a strong influence on noun acquisition. Early acquired words were higher in ND.
This study examines the influence of IF and ND in vocabulary acquisition of French children aged between 16 and 30 months (522 children). Data were collected through the French version of the MacArthur Development Inventories. Following the methodology of Stokes (2010), a regression analysis was conducted, but median value, instead of mean value in order to neutralize the effect of extreme values, was computed for each child. A regression analysis based on children who acquired 5 words or more (n=462) revealed that ND and WF together predicted 45% of the variance in vocabulary size, with ND and WF uniquely accounting for 32.2% and 12.8% of that variance respectively. The same analysis was done with nouns only and predicates only. For nouns, the model predicted 64.6% of the variance whereas for predicates, the size of predicate vocabulary was not correlated with any of the two variables: IF and ND.
These results suggest that the acquisition of nouns and predicates are not influenced by the same variables. Nouns seem strongly influenced by IF and ND but not predicates. One possible hypothesis is the fact that predicates in French are acquired later than nouns implying that different variables play a role at different ages.
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Child bilingual language development
Semantics and lexicon

Aspects on the acquisition of aspect in Greek-English bilingual children

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Abstract

This study aims at investigating the comprehension of perfective and imperfective aspect in Greek-English bilingual children. Previous studies indicate that imperfective appears later than perfective (Andersen & Shirai, 1996; Bardovi-Harlig, 2000) and, besides, that the [+habitual] imperfective appears later than the [+continuous] imperfective (Shirai, 2002). The present study addresses the following research questions: (a) whether the bilingual children experience more difficulties with imperfective than perfective aspect; in particular, with sentences expressing habituality, and (b) whether the presence of conjunctions makes the selection of aspect harder or not.

The participants are Greek-English bilingual (N=30) and Greek monolingual (N= 30, control group) children with normal non-verbal intelligence (Raven's test; 2003). They are divided into two age groups (8-10 and 10-12 years) and they undertook a standardized vocabulary production task in Greek. The selection between perfective and imperfective aspect was tested via a forced-choice oral task, which consisted of twelve short stories that tested three experimental conditions: perfective, [+continuous] and [+habitual] imperfective; for each condition four individual stories with and without conjunctions were provided. The participants listened to the stories, they were given the two aspectual forms of a specific verb and they had to choose the correct one.

The results revealed that perfective aspect was successfully acquired by all groups, while problems with the imperfective aspect are evident in all groups. The monolingual group is more accurate than the bilingual one in the imperfective aspect. Furthermore, developmental differences were attested in the acquisition of the imperfective aspect. The difficulties for all groups are more prominent when the imperfective sentences denote habituality. Moreover, both age groups' performance suggests no association between the presence of conjunctions and the decoding of aspect. Interestingly, a significant correlation was found between children's vocabulary level and their performance on aspect.

First language acquisition
Morphology

Salience befor frequency in the early acquisition of German, English, Italian and Romanian articles

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Abstract

Salience before frequency in the early acquisition of German, English, Italian and Romanian articles
Wolfgang U. Dressler, Katharina Korecky-Kröll, Monika Boniecki (Univ. of Vienna), Sabrina Noccetti (Univ. of Pisa), Noemi de Pasquale (Univ. of Palermo), Anastasia Dressler (Medical Univ. Vienna), Alina Tigau, Larisa Avram (Univ. of Bucharest).
Two important factors in language acquisition, namely input frequency and salience, are often difficult to separate. Articles, which usually have high input frequencies, but different degrees of salience in different languages, provide a good testing ground for the question which factor is more important.
Our main claim is that the degree of positional and prosodic input salience is a decisive factor for the emergence and early development of articles, whereas later on input token frequencies are more important for acquisition.
The prenominal indefinite articles are uninflected in English (a/an), inflected for gender in Italian (un(o)/una), Romanian (un/o) and German (ein/eine/ein), and for case as well in Romanian and German.
The definite articles are preposed in English, Italian and German, whereas they are suffixes in Romanian (e.g. om 'man', def. om-ul [omu]).
In noun phrases we find the following salience differences:
1. Due to the recency effect, Romanian definite suffixes are more salient than prenominal indefinite articles. Similarly plural and case suffixes are more salient than prenominal articles.
2. The bisyllabic, weakly stressed forms of most indefinite articles in Italian and German are more salient than the always unstressed prenominal, monosyllabic or asyllabic definite articles.
Based on the longitudinal spontaneous speech corpora of two children per language (aged 1;7 to 3;6) and their parents, we demonstrate that nominal suffixes are for several months more numerous than prenominal articles, although they are less frequent in the input. And although definite articles have higher input frequencies than indefinite articles, the latter emerge earlier and are more numerous for several months, before children's outputs start to reflect input frequency distributions. The exception of Romanian where more salient enclitic definite articles emerge earlier than prenominal indefinite articles provides further evidence for the predominance of salience over frequency in early phases of language acquisition.
(298 words)

Neurobiology in typical and/or atypical language acquisition
Language, general

Language Use and Symbolic Play Levels by Preschool Children with ASD

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Abstract

Children with ASD vary with respect to their linguistic abilities. Many exhibit sever impairments and utter stereotyped and repetitive speech, some show mild or no delays, and others are reported to use limited speech for functional or descriptive purposes only. Few studies have examined the lexical, morphology and syntactic structures in the spontaneous speech of young children with ASD (DSM-5, Tager-Flusberg, Paul & Lord, 2005).
The present study had three goals: 1) to examine the range of linguistic forms that are used by Hebrew speaking preschool children with ASD; 2) to unfold relationships among different linguistic measures that were used for the assessment of language samples; and 3) to explore relationships between linguistic scores and play levels in the same participants.
A cross-case design with 8 boys and 2 girls with ASD, in the age ranges of 49-79 months, was utilized. Language samples were recorded from each participant using two elicitation means: a picture book and a set of cards. Play samples were recorded with two sets of functional and symbolic toys. Lexical Diversity, MPU(MLU), and H-IPSyn, were calculated. a Hebrew test of expressive vocabulary (TAVOR) was administered to each participant.
The results indicated a positive correlation between MPU, H-IPSyn and Tavor scores. However, Lexical diversity scores did not correspond with the other linguistic measures. A complex relationship was obtained between the overall linguistic score and the levels of play. Children who obtained high play scores also obtained high linguistic scores, however, children who demonstrated low play levels showed diversity with respect to their linguistic scores. Some children with low scores in play obtained high linguistic scores, and others indicated difficulties in both areas. Results are discussed with the unique characteristics of language use by children with ASD.

Literacy and language
Language, general

Beyond bookreading: The home language and literacy environment of at-risk toddlers in the Netherlands

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Abstract

It is well known that a stimulating home environment can promote children's language and literacy development (Dickinson & Tabors, 2001; Payne & Whitehurst, 1994). However, little is known about what exactly parents do (beyond bookreading) at home to encourage children's language and literacy skills. This study examined parental language and literacy behaviors among families of at-risk toddlers (average age 37 months) in a rural area in the northern part of the Netherlands. The data collected was part of a larger project focusing on eliminating disparities in language development among children at risk (e.g., low parental education, diagnosis of language delays, parental addiction). Parents (n=321) filled out a questionnaire containing 80 items on demographics, literacy behaviors, and language use. Children's receptive vocabulary (n=146) was assessed using the Peabody Picture Vocabulary Test (PPVT).
Around 60% of parents had attended some community college while approximately 21% had attended college. More than a third of the children had fewer than 25 books at home and more than one third of the parents indicate they had fewer than 25 books for adults. Most parents reported reading daily to their children (72%). Singing songs with children was a popular activity as more than 50% of parents reported to do so on a regular basis. Making music or reciting nursery rhymes were less popular activities. We did not find a significant relationship between literacy environment (as defined by the presence of reading materials in the home and library visits) and child language scores. Surprisingly, no significant relationship was found between bookreading frequency and children's PPVT scores. However, a positive and significant correlation was found between parental reading attitudes and children's receptive vocabulary. The information gathered could help professionals and policy makers make decisions on how to encourage parents to provide a stimulating home environment (e.g., focus on nursery rhymes or singing songs).

Language development in atypical populations
Language, general

"Presurgical syllable-structure in canonical babbling as predictor for postsurgical language development in infants with cleft palate?"

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Abstract

Several longitudinal studies demonstrated continuity between canonical babbling and first words. For example, a high correlation of sound repertoire and syllable structure between babbling and early word production was found (Vihman 1992).
However, does this assumed continuity also apply to infants with cleft palate, i.e. with a serious malformation of the vocal tract?
Infants with cleft palate are confronted with a dramatic break in their pre-speech development by palatal surgery in the middle of the transition period from babbling to word production at about 12 months. The influence of the presurgical, i.e. under non-physiological conditions, trained articulatory patterns and syllable structures on speech development after palatal closure in German infants isn´t known yet.
The aim of this pilot-study was to investigate this issue in German infants with cleft palate (CPO).
Participants were 10 infants (5 CPO, 5 infants without cleft =NC). Properties of canonical babbling syllables were compared between the CPO-group and the NC-group at 3 points in time at the age of 11 to 14 months of life: (1) 3 weeks before palatal closure (2)3 and (3) 6 weeks after palatal closure of the CPO-group (at 52 weeks, range 46-55 weeks). Vocalizations were recorded after the infant started babbling and continued 30 minutes. A standardized mother-child-interaction (play situation) was chosen and a fixed set of toys used. Syllable properties were analysed using PRAAT. We focussed on the analysis of CV-structure, maximal repetition number and syllable-length.
This is an ongoing longitudinal research project. We will put the results of the first 10 consecutively recruited infants to the conference as a basis for discussion. Preliminary results point to continuity also in the developmental course of infants with cleft palate.
Literature:
VIHMAN M.M., 1992: Early syllables and the construction of phonology. In: Ferguson C.A., Menn L., Stoel-Gammon C. (Eds.): Phonological development: Models, research, implications. (Timonium, MD. York Press), pp 393-422

Sign language acquisition and gestures
Semantics and lexicon

Gestures help children focus on the action of verbs

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Abstract

Three-year old children often cannot extend the meaning of a novel transitive verb to the same action with a different object (Kersten & Smith, 2002). By three-years of age, children can use gestures to help learn the meanings of verbs (Goodrich & Hudson Kam, 2009). In the present study, we tested whether co-speech gestures help children focus on the action of a novel transitive verb rather than the semantic information that it conveys.

Three-year old children were randomly assigned to learn six novel transitive verbs in one of three conditions: 1) with no gesture, 2) with a representational gesture showing the path of the movement or 3) with a representational gesture using a body part as the object that the children saw being acted upon. If children attended to the gesture to learn the appropriate extension of the verb, they should extend the novel verbs to the same actions with different objects most frequently in the condition with a gesture and imagined object. Extension to the same action should be second greatest with no gestures, and finally, with a representational gesture using a body part as object. We tested their extensions by giving the children a forced choice between the same action + a different object and a different action + the same object.

The results of the preliminary data show that the children are equally likely to extend the meaning of novel verbs to the same action + a different object in the two gesture conditions. The children are less likely to extend novel verbs to the same action with no gesture accompaniment. If the final results show this same pattern, then children might attend to the path of movement of gestures (regardless of hand shape) to learn verbs (Marentette & Nicoladis, 2011).

Cognition and language development
Language, general

Decrease externalized behavior problems by enhancing the quality of parent/child interaction and communication features: effectiveness of a parent-implemented language intervention

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Abstract

Previous researches showed that externalized behavior problems and language delays are frequently associated on preschoolers (Kaiser & al., 2000). The present study aimed to test the hypothesis that this association could be intensified by a common risk factor: a dysfunction in parent/child interactions. In order to answer this question, the effectiveness of a parent-implemented language intervention was evaluated both in parent/preschooler interactions and behavioral characteristics.
Forty-one children from 3 to 5 year-old, whose parents reported difficulties to manage behaviour, were recruited in Belgium and were allocated to control (N=24) or experimental groups (N=17). Parents from experimental group participated to a naturalistic program in order to promote parent/child verbal interactions (8 sessions of two hours). During the pretest and the posttest, an experimenter assessed child language while parent filled questionnaires. Finally a sample of parent/child interactions was videotaped (free play and frustration task). All language samples in free play were transcribed and analysed. Furthermore, parent/child interactions were evaluated followed the Crowell procedure (Crowell & Feldman, 1988): parent's responsiveness and positive affects, child's perseverance and enthusiasm for the task.
The results revealed that after the intervention, modifications of parent/child communication appeared: children increased their number of turn-takings, parent/child turn-taking ratio became more equilibrate and parents increased repetitions of child utterances. Furthermore, after this intervention, the quality of parent/child interactions was enhanced. Firstly, parents from the experimental group became more affective and responsive, and secondly, children became more perseverant and enthusiastic for the tasks. Our results imply that parent/child communication features and parent behavioural and emotional responsiveness can be improved after a parent-implemented language intervention. These modifications created an enhancement of child's engagement, which played an important role on language and cognitive development (Kim & Mahoney, 2004). Moreover, further analysis will be realized to assess efficiency of the intervention on child behavioural characteristics (analysis of questionnaires and frustration task).

Neurobiology in typical and/or atypical language acquisition
Syntax

Online processing of pronouns in children with Specific Language Impairment

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Abstract

Children with Specific Language Impairment (SLI) have been reported to have difficulty understanding referential dependencies. Such dependencies also pose some difficulty for children with typical language development (TLD), as evinced by the different developmental time course of reflexive and personal pronoun comprehension, where reflexives are mastered earlier than personal pronouns. In children with TLD, the error pattern termed the "delay of principle B effect" points to children's developing knowledge of binding principles as the source of difficulty. However, there is a confound in several studies of this developmental delay, where reflexives find their antecedents within the same clause, while personal pronouns require antecedents outside their clause, suggesting that mere distance could be an important processing factor. The present study, using an eye tracking-while-listening method, investigates the role of distance and binding constraints in children with TLD and SLI using four sentence types, reflexive and personal pronouns at short at long distances from their referents. This study is also grounded in an interference-based account of sentence processing, where sentences containing noun phrases that intervene between two co-referring elements in a sentence are particularly problematic for children and adults with language disorders. Data collection is continuing and results will be discussed in terms of the extant hypotheses, one of which -- the intervener hypothesis -- extends to the comprehension of other structures.

First language acquisition
Pragmatics

Metapragmatic Competence and Conversational Strategies: Evidence from Child-Adult Interactions in Spanish Children

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Abstract

The study of conversational skills and metapragmatic competence (Verschueren, 2004) in children has been neglected in the literature on Spanish language acquisition. The current research aims precisely at filling this gap. For this purpose, we have examined transcripts that belong to Koiné corpus included in CHILDES system. Five adults and eleven Spanish-speaking children (aged 3;0-4;6) participate in this group of spontaneous conversations. We have carried out a qualitative analysis following an observational method in order to answer the next questions:
a) How do children behave when other participants overlap their turns?
b) How do children react when they make a first pair-part of an adjacency pair but they do not receive the expected second pair-part in the subsequent turn?
c) What is the pragmatic function of the self-repetitions of children utterances throughout the following turns within a conversational sequence?

Our results let us to conclude the following points. On the one hand, children are aware of the rules that govern the turn-taking system from early age. Children explicitly demand to be listened when another speaker overlaps their turns. Moreover, they master the inherent dialogic structure of conversations. Some examples suggest in fact that children repeat the first pair-part of a question-answer adjacency pair throughout the subsequent turns when they do not immediately receive the expected second pair-part of that adjacency pair –this process is what Gallardo (1996) labels 'relanzamiento' in Spanish–. On the other hand, children repeat what they have said in their previous utterances throughout the subsequent turns with two main purposes: a) repetitions might be intended to repair the conversational transgression that takes place when another speaker overlaps their turns; b) repetitions might occur as a conversational strategy to request their turn and elicit the hearers' attention (Ochs & Schieffelin, 1983) when other speakers are talking.

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First language acquisition
Semantics and lexicon

Vocabulary composition and acquisition rates in Swedish children aged 18-24 months

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Abstract

The relationship between young children's vocabulary composition and rates of acquisition is an area which has received relatively little attention in Sweden. Among the few studies addressing this subject are one of the CDI norming studies (Berglund & Eriksson, 2000) and a small-scale study of young Swedish children's early language development (Richthoff, 2000). The current study includes over 200 child participants who are part of a larger, longitudinal project. Analysis was based on measurements using the Swedish version of the MacArthur CDI at 1;6 and 2;0. The children's vocabulary scores were grouped according to quartile divisions based on Swedish norming data at the two time points; and the children were designated as slower learners, average learners, late bloomers or fast learners to indicate rates of development. Following Bates et al. (1994), variables were created for the total percentage of common nouns, predicates, closed-class words and social words in the children's active vocabularies, as well as the relative proportion of the number of words in each class (opportunity scores). Stepwise regression analysis was performed to analyze the predictive value of vocabulary composition and background variables at 1;6 for vocabulary size at 2;0, and Pearson product correlations were calculated between variables. In addition, descriptive measures of vocabulary composition in the four learner groups were compared. Results indicate that children who used the greatest proportions of nouns and the fewest closed-class words at 1;6 had the largest vocabularies at 2;0. Level of parental education also explained a significant amount of variation regarding differences between slower learners and late bloomers. In accordance with previous research, children with small vocabularies showed the greatest variation in vocabulary composition. These results are of interest to educators and parents alike, and underscore the importance of early stimulation in children's word learning.

Cultural and social factors in child language development
Language, general

Communication Roles in Dyadic Narrative Elaborations

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Tamis-LeMonda, Catherine, New York University
Obregón, Javanna, New York University

Abstract

Narrative development occurs at an early age as children interact daily with important others. A focal point of previous research has been on caregivers' elaboration during narrative interactions with their children showing that elaboration is predictive of various language, literacy, cognitive and socio-emotional outcomes. Over the last 30 years, much research has examined the extent of caregivers' elaboration, the ways in which elaboration is realized, as well as the differences in elaboration across narrative contexts. Nevertheless few studies, if any, have examined the transactional nature of maternal elaboration- that is, the role mothers and children play in prompting the elaboration. The present study addressed this gap in the literature by examining various features of narrative elaboration in a sample of 45 Spanish-speaking Mexican immigrant caregivers and their three-year old children. Dyads were asked to share a wordless picture book as they naturally would. Conversational exchanges were videotaped; no time limit was provided. Interactions were transcribed and verified by native Spanish speakers using a standardized system (MacWhinney, 2000). All elaborative utterances were coded for communication role (i.e., spontaneously produced by speaker or prompted by interlocutor), pragmatic function (i.e., provision of information or request for information), and type of elaboration (i.e., new elaboration or embellished elaboration). Preliminary results suggest that, for the most part, caregivers acted as a sole narrator of an engaging story, as demonstrated by a high percentage of elaborative utterances. Caregiver elaborations were mostly in the form of spontaneously produced new elaborations, followed by spontaneously produced embellished elaborations. Children contributed to the narrative interaction with few elaborative utterances, primarily prompted by caregivers. Results are discussed in relation to the socialization narrative practices in Mexican families and how these might shape their children's narrative development.

Cognition and language development
Pragmatics

On the acquisition of metonymy

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Abstract

In metonymy an expression is used to refer to something that falls outside its conventional denotation, something with a clear associative relation linking the conventional denotation and the contextually, determined, metonymic one, e.g., 'The ham sandwich left without paying' (cf. Nunberg 1979). While metonymic uses by adults are common, little is known about how metonymy is understood or used by preschool children. To investigate this, we gave 47 native English-speaking children (aged 2;9 – 5;9) and 27 native English-speaking adults one comprehension task and two elicitation tasks.
EXPERIMENT 1: For each of nine stories, participants were shown a picture presenting two people, one with a salient property. In the metonymic condition, the experimenter referred to one of them using a metonym; in the literal condition, she referred to the property itself. The child was asked to choose between a picture of the literal referent, the metonymic referent, and a distractor. EXPERIMENTS 2 and 3: Participants were asked (i) to refer to an unfamiliar game just presented to them, and (ii) to name people and animals with salient properties.
Logistic regression analyses showed a significant interaction between age and condition for comprehension, with older children more likely to choose literal than figurative interpretations of the metonyms they heard, as well as an increase in metonym production with age in both elicitation tasks.
Although children were outperformed by adults, even three-year-olds could both understand and produce metonyms in certain circumstances. Young children may find it easier to produce a metonym than a full description as a referring expression in certain contexts, and metonymy may serve as a useful strategy in referring to unfamiliar entities. Between age four and five, there is an increasing tendency to interpret metonyms literally. We suggest that this reflects a growing metalinguistic ability, which pushes children to over-emphasize literal meanings.

First language acquisition
Syntax

The interaction between syntactic, phonological and semantic cues for noun categorization in child-directed speech.

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Abstract

How do children learn the basic grammatical categories of their language? Several studies (e.g. Smith, Smith & Blythe, 2011) point out that semantic information guides initial word categorization (e.g. nouns predominantly denote objects while verbs denote actions). However, such an approach presupposes an initial identification of specific objects or actions and their immediate pairing to lexical nominal or verbal elements on the part of language learners. On the other hand, other studies (e.g. Monaghan, Christiansen & Chater, 2007) suggest that it is actually the phonological form of words which language learners are initially exposed to, as they have no access to semantic information in their first months of life. Furthermore, according to the study, the interaction between phonological and syntactic information provides very useful information for word categorization tasks.
The present study aims at investigating the way in which phonological, syntactic and semantic cues could interact together to provide reliable information for word categorization. We examined the characteristics of nouns in the input addressed to four English-learning infants from the Manchester corpus (Theakston et al. 2001) in the CHILDES database. In particular, we considered all utterances addressed to children who were 2.5 years old or younger, which gave a total of 51,577 nominal tokens for analysis. The statistical strength of category membership using semantic, syntactic and phonological variables was weighed by means of discriminant analysis. The results from this study show far more accurate results for successful word categorization when phonological, semantic and syntactic cues are simultaneously considered, rather than when only one or two types of cues are considered. Furthermore, the three different types of cues interact in such a way that the lack of information at one level of linguistic analysis (e.g. semantics) in a particular group of words appears to be compensated by cues from other sources.

Other (please, specify in the box below)
Cognition and language learning
Morphology

Explicit vs. implicit training: which is preferable for training morphological rules in children?

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Abstract

Controversy exists as to whether explicit or implicit training is preferable for learning morphological rules in children. Training may be considered explicit or implicit when learners do or do not receive information concerning the nature of the rule (Hulstijn, 2005). The issue of implicit/explicit training is important in children since under natural conditions children learn and use morphological rules mostly implicitly. Moreover, implicit learning matures very early in childhood, while explicit learning emerges later and continues to improve until young adulthood (DiGiulio et al., 1994). The current study was designed to investigate which is preferable for training morphological rules in children: implicit or explicit? We followed the learning process of an artificial morphological rule (AMR) over 10 learning sessions, in sixteen 8-year-olds, measuring accuracy (% correct) and speed (RT). The AMR consisted of morpho-phonological transformations of Hebrew verbs expressing a semantic distinction whether the preceding noun was animate or inanimate. Participants were trained to judge and produce repeated and new (generalization) items of the AMR. Eight participants received explicit explanation of the nature of the rule at the beginning of each session (explicit training) and eight participants did not receive any explanation at any phase of the training. The results showed that explicit training had a positive effect on the ability to apply the AMR correctly (accuracy) to repeated items, albeit, at the cost of speed. Moreover, while none of the implicit learners was able to generalize the AMR to new items correctly, most (7/8) of the explicit learners succeeded in generalizing the AMR to new items correctly. The results suggest that despite immature explicit mechanism, eight-year-olds are able to utilize explicit information for learning to apply a morphological rule to repeated items and especially to generalize it to new items.

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Cognition and language development
Language, general

Comprehension of inferences in a narrative context of 3 to 6 year old children.

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Bouchard, Caroline, Université Laval
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Abstract

Problem under investigation: Making inferences plays a crucial role in reading comprehension (Botting and Adams, 2005; Cain & Oakhill, 2007) and, therefore, in the educational success of young children (van Kleeck, 2008). While this ability develops during the preschool period, there is currently no proposal for the steps in its developmental sequence. Yet, information about how children gradually master this ability will enhance the way in which it can be supported and facilitated in education and speech language pathology settings. To address this important gap in knowledge, the aim of this study is to describe inferential abilities in a narrative of children aged from 3 to 6 years and to compare the results across age groups.
Empirical methods used: A task of inference comprehension was created on Ipad. It consists of a story that follows a traditional narrative structure during which 20 questions are asked to assess six types of elements inferred from the story structure (i.e. internal response, trigger event, goal, prediction, attempts to resolve the problem, and solution). Participants are 120 typically developing children (30 children from each age group: 3, 4, 5 and 6 years of age).
Results obtained: Preliminary results show that: (1) the ability to understand inferences emerges in children as young as 3 years of age and specific types of inferences seem to be easier for these younger children (i.e. internal response of the character and goal of the story), (2) inferential comprehension skills improve with age (from 3 to 6 years old) and (3) there is a beneficial effect of the repetitive structure of the narrative on the ability to understand inferences within the story.
Conclusion: This study addresses an important gap in the areas of early education and speech language therapy by providing a description of the ability to make inferences across groups of children aged 3 to 6.

First language acquisition
Syntax

Learning auxiliary inversion from structured messages

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Abstract

English complex questions are formed by fronting the main clause auxiliary (``is the boy who is eating running?'', structure-dependent movement), not the embedded clause auxiliary ("is the boy who eating is running?", structure-independent movement). Since these questions are rare in child-directed speech, it has been claimed that innate constraints remove structure-independent rules from the learner's hypothesis space [1]. Here we test whether structured meaning can be an alternative to innate syntactic constraints.
We adapted a connectionist model of language acquisition that learns from exposure to meaning-form pairs. Crucially, we assume that learners must be able to infer non-linguistic meanings, e.g., that the above sentence describes two events RUNNING(BOY) + EATING(BOY). The EATING message is given and the RUNNING message is not known by the speaker (marked as a question). Over time, the model should learn to use this message structure to acquire the correct rule.
Model input consisted of simple/complex declaratives and questions with copulas, modal auxiliaries, and progressive verbs. No complex questions with auxiliaries in both clauses occurred in training. After 500K epochs, the model produced such questions with +90% accuracy from novel meanings. Errors during development were similar to those found in children who repeat auxiliaries (``*is the boy that is nice is happy?'') and make structure-independent errors (``*can boys that run can jump?'') [2].
The model learned from simple questions, that features in the message signalled auxiliary movement, and from complex declaratives, that different parts of a sentence depended on different message components. By combining these regularities that are present in child-directed speech, it was able to generalize auxiliary movement in a structure-dependent way. This is the first explicit model that learns to use message structure in complex questions production.
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[2] Ambridge, B., Rowland, C. & Pine, J. (2008). Is Structure Dependence an Innate Constraint? New Experimental Evidence From Children's Complex-Question Production, Cognitive Science 32, 222–255.

First language acquisition
Morphology

Little Kids, Big Paradigms: Acquiring Murrinh-Patha 'Bipartite' Verbs

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Abstract

Little is known about how children acquire complex polysynthetic verb paradigms (Stoll, In Prep). Logically, children must deconstruct the composition of larger forms into smaller 'morphological constituents' with associated meanings in order to produce a complex paradigm (Rose & Brittain, 2011). This poster addresses these issues with naturalistic data from four children (2;7 – 4;5) acquiring Murrinh-Patha, a polysynthetic language of Northern Australia.

This study focuses on children's complex verb morphology usage in Murrinh-Patha, specifically 'bipartite' verbs. Bipartite verbs, which account for the majority of verbs, consist minimally of two stems, a classifier stem and a lexical stem. These stems may be discontinuous. Bipartite verbs are semi-productive. Classifier and lexical stems combine in many combinations to encode verbal semantics, argument structure and event denotation. There are approximately 38 classifier stems which inflect for subject person/number as well as six tense/aspect/mood categories resulting in a paradigm with 53 forms. A single classifier stem can combine with up to 163 distinct lexical stems.

Classifier and lexical stem combinations are largely idiosyncratic in the two youngest children (2;6 & 3;1) except for a single classifier with general semantics. The initial non-stressed verb elements, containing the classifier stem, are regularly omitted. The number of productive classifiers is greater in the two eldest children (3;6 & 4;5) but is still limited, with most combinations remaining idiosyncratic. Overgeneralizations are found in the older children but are not the result of illicit classifier and lexical stem combinations but are due to the overgeneralization of semi-regular subject marking patterns. I show that children associate elements of the verb with particular meanings but surprisingly do not deconstruct bipartite verbs into distinct classifier and lexical stems. Bipartite structures are learned initially as single entities with productivity emerging slowly in a piecemeal fashion.

Rose, Y., & Brittain, J. (2011). Grammar Matters: Evidence from Phonological and Morphological Development in Northern East Cree. Paper presented at the Generative approaches to language acquisition North America.

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Child bilingual language development
Phonetics and phonology

Symptomatology of speech sound disorders in bilingual children (Turkish-German / Russian-German)

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Abstract

Background
Children with speech sound disorders (SSD) build the largest client group on case loads of speech and language therapists (SLTs). In Germany the number of children growing up bilingual increases steadily and SLTs are daily asked to provide differential diagnosis for these children. However, very little is known about phonological acquisition, SSD and how to diagnose theses in bilingual children and children often receive diagnosis and intervention in the majority language only (Mc Leod & Goldstein, 2012). The aims of the study were to investigate whether SSD can always be identified in both languages (Holm et al 2005) and to compare the symptomatology occurring across languages.
Methods:
Following a screening procedure that identified them as at risk for SSD, 10 bilingual children (5 Turkish-German & 5 Russian-German) were individually assessed by native speakers in both their languages. Picture naming task for each language were used (German standardized, Turkish published, Russian created). Phonological error pattern were evaluated and compared, using monolingual data (as available) as baseline.
Results:
Results showed that SSD was present in both languages in all 10 children when comparing the error pattern with monolingual norms. Each child presented identical and different, partly idiosyncratic phonological and phonetic error pattern in both languages. Some of the pattern need to be considered as language specific and thus were only expected to occur in one language as they did. Other patterns are typical for both languages but only occurred in one.
Conclusion:
The findings indicate that SSD is present in both languages in bilingual language acquisition and that assessing only one language does not provide a comprehensive picture of speech error pattern in a bilingual child with SSD. Reliable differential diagnosis in all languages, however, requires acquisition data in the various language combination.
Literatur:
Holm, A., Stow, C. & Dodd, B. (2005). Bilingual children with phonological disorders: Identification and intervention. In B. Dodd (Hrsg.), Differential Diagnosis and Treatment of Children with Speech Disorder (Seite 275- 288). London: Whurr.
Mc Leod, S. & Goldstein, B.A. (2012). Multilingual Aspects of Speech Sound Disorders in Children. Bristol, Buffalo, Toronto: Multilingual Matters.

Cognition and language development
Phonetics and phonology

Resource allocation in a lexical task: Pupil size as indicator of phonological and semantic processing in 30-month-old children

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Abstract

This study shows for the first time that mispronunciation detection in young children can be measured with pupillometry. Compared to correctly pronounced words we found that mispronounced ones result in larger pupil dilations whereas unrelated words or non-words do not. The results for adults are more complicated: The effects depend on the word status of the unrelated items.
Lexical representations of children of about 18 months are fine-grained enough to detect segmental or sub-segmental changes (White & Morgan, 2008; Yoshida et al., 2009). However, the dependent variable of target looks in these studies cannot measure the costs associated with processing auditory stimuli. Research using pupillometry demonstrated that bilingual 2.5-year-old children allocate more attention to objects when labeled with unrelated words than with their target labels whereas monolingual children do not (Kuipers & Thierry, 2013). Hence, bilingual children seem to process unrelated words in contrast to their monolingual peers.
We asked whether monolingual children show pupillometric responses to mispronounced words with changes in the initial segment. If they consider them to be related to the object larger pupils compared to correct words would be predicted as they reflect higher processing costs. A third, unrelated condition was included as a between-subjects factor, where either unrelated words or non-words were presented. Twenty five monolingual German-speaking children aged 2.5 years and a group of young adults participated in the study.
Our results for correct and unrelated words in children and adults replicate Kuipers & Thierry's findings for monolinguals. The contrast to the adults' pattern could indicate that monolingual children do not try to integrate information in unrelated trials. Furthermore, larger pupils in mispronunciation trials suggests that children need more resources to process these compared to correct or unrelated trials. Investigations of different types of phonetic and/or semantic changes might be a promising continuation of this study.

Child bilingual language development
Language, general

Do preschool bilingual children differentiate the narrative style of their languages?

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Abstract

Researchers have established that bilingual children differentiate their languages early in development in terms of syntax, morphology, lexicon, phonology, and language choice (Genesee, 2006). In this study, we test if preschool bilingual children also differentiate narrative styles. One previous study has suggested that bilingual children might differentiate their two languages in terms of narrative style from at least the age of four years (Dart, 1992). In this study, the spontaneous narratives of a French-English bilingual 4-year-old were recorded and her narratives contained a greater variety of tenses in French compared to English. Furthermore, the child tended to tell French stories in the present tense and English stories in the past. Dart (1992) linked the child's preference for tense to written stories the child had heard in the two languages.

To test the generalizability of this case study, we studied ten French-English bilinguals' tense use in cartoon retellings. We compared their tense use to that of ten French monolingual and ten English monolingual of the same age group (4-6 years). Children can often tell an independent story starting around 4-5 years of age (Fitzhugh, 2010).

In the two monolingual groups, the children preferred to use the past tense. Nevertheless, we found some small differences between the two groups of monolinguals: whereas English monolingual children recounted the story almost entirely in the past tense, the descriptions of French monolinguals showed more variety in tense use. The bilingual children showed the same pattern of results. That is, they preferred the past tense in both languages and their French narratives were slightly more diverse in tense use.

These results suggest that to the extent that there are narrative-style differences among monolinguals, the bilinguals show that same difference by the age of four years.

Child bilingual language development
Language, general

One language, two dialects, or two languages? Simultaneous acquisition of Swiss and Standard German

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Grassmann, Susanne, University of Zurich
Daum, Moritz, University of Zurich

Abstract

Studies often report that bilingual children possess a smaller vocabulary in the language of testing than monolinguals (Bialystok, Luk, Peets, & Yang, 2010). It is however unclear, whether acquiring two dialects of the same language is more comparable to monolingual language acquisition or more comparable to bilingual language acquisition. We are addressing this question by investigating the acquisition of Swiss-German, a dialect of standard German. Eighteen- to 30-month old children' language skills are determined by using a Swiss-German adaptation of the German CDI (Szagun, Stumper, & Schramm, 2009). For each child, productive vocabulary, receptive vocabulary, grammatical morphemes and word combination proficiency were measured.

Preliminary analyses are run for a total of 526 children (60% are monolingual Swiss-German, 13% are bidialectal Swiss-German/ Standard German, 20% are bilingual and 7% acquire more than two languages). The statistical analyses, controlled for age of participation, revealed significant effects for language situation in the dependent variables productive vocabulary, grammatical morphemes and word combination proficiency, but not for receptive vocabulary.

The results show that regarding productive vocabulary and grammatical morphemes, bidialectal children had lower scores than monolingual children and bidialectal children did not differ from bilingual children. Regarding word combination proficiency bidialectal children had lower scores than monolingual children but higher scores than bilingual children.

In sum, thus the results are mixed: In terms of vocabulary and morphological development bidialectal children appear to be more comparable to bilingual children, whereas in terms of syntax they differ both from monolingual children and from bilingual children.

Bialystok, E., Luk, G., Peets, K. F., & Yang, S. (2010). Receptive vocabulary differences in monolingual and bilingual children. Bilingualism: Language and Cognition, 13(04), 525–531. doi:10.1017/S1366728909990423

Szagun, G., Stumper, B., & Schramm, A. S. (2009). Fragebogen zur frühkindlichen Sprachentwicklung (FRAKIS) und FRAKIS-K (Kurzform). Frankfurt: Pearson Assessment.

Child bilingual language development
Morphology

Competing Systems: The Acquisition of Form-Function Mappings in German as a Second Language

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Abstract

Languages make use of varying cues to mark semantic relations: Whereas in Russian case markers have a high conflict validity, Dutch has lost formal nominal case marking which is why semantic rela-tions must be determined on the basis of word order. Although case marking in German is a highly reliable cue, several syncretisms wthin the case system lead to the fact that L1-speakers of German also rely on word order patterns to identify semantic roles. As case markers are often intransparent, speakers tend to make use of cues that have a weaker overall validity but seem to be stronger in conflict contexts.
In terms of the Competition Model, these cross-linguistic differences in form-function relations affect speakers' processing strategies: speakers of different languages use varying cues to identify semantic relations. It is not fully clear, though, how deviant mapping systems influence L2-learners processing mechanisms. My PHD-project thus aims at determining L2-learners' processing behaviour when confronted with form-function mappings that differ from the familiar L1-system. Russian and Dutch children acquiring German as a Second Language (aged 7-10) were asked to name the agent in transitive sentences varying between animacy, word order and case. Whereas Russian L2-learners heavily rely on case markers when word order and morphological cues compete, Dutch learners predominantly apply the first noun-bias when naming the agent of the sentence. Hence, transfer of conceptual knowledge takes place: When acquiring a new mapping system, learners make use of cues that have a high conflict validity in their L1. The speakers' conceptual L1-knowledge thus influences the processing and the acquisition of the German mapping system. With regard to the Competition Model, the results show that, whenever speakers are confronted with deviant form-functions mappings, there is cross-linguistic competition between cues with varying conflict validities.

Cognition and language development
Pragmatics

Online and off-line processing of scalar implicatures in children and adults in Spanish.

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Tavares, Gema, ERI Lectura, University of Valencia
Saldaña, David, University of Seville

Abstract

Developmental research suggests that children are more logical than adults while solving scalar implicatures containing the expression some. They often prefer the semantic interpretation (possibly all) rather than pragmatic (implying not all) of these utterances (Papafragou & Musolino, 2003; Huang & Snedeker, 2009). However, some studies argue that children might be capable of detecting pragmatic meaning, but are also more tolerant with semantic interpretation or pragmatic violation (Katsos & Bishop, 2011).
In this study, we aimed to explore whether children of different ages and adults are sensitive to pragmatic violations using on-line measures of eye movements.
Three groups of Spanish children participated in our study: twenty-eight 5 to 6 year-old children, twenty-four 9 to 10, twenty-eight 11 to 12, and twenty-seven Spanish adults over the age of 19.
Using a visual world paradigm, participants were presented with items in which groups of two, five or six objects were shown in four screen quadrants (one was left empty). At the same time, a spoken dialogue was played containing one of the target expressions- some, most of, all- (e.g. most of the giraffes had food). Participants had to choose the corresponding quadrant.
For some, we found significant differences between 5-6 and 9-10 year old, and adult participants' average accuracy. Analyses of time spent looking at each area (Dwell Time) revealed that time spent looking at the correct alternative was significantly lower in the 5-6 year-olds than in the other age groups in the post-quantifier interest period.
Results from our study demonstrate that there are differences between 5-6 and 9-10 year-old children, and adults in responding to pragmatic violations of the use of scalar implicatures. However, eye movements of 9-10 year olds seem to indicate that they processed differences in the semantic and pragmatic use of these implicatures like adults.

First language acquisition
Morphology

The effect of anaphoricity in the acquisition of imperfective aspect

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Hout, Angeliek van, University of Groningen

Abstract

Contrary to some studies showing 3-year-old children's adult-like comprehension of grammatical aspect morphemes, some more recent studies concluded that the comprehension of IPF is not yet adult-like at age 5. Children's non adult-like interpretation of the IPF has been attributed to the anaphoric nature of the IPF and to children's difficulties linking the IPF to the relevant time in the discourse when testing IPF in narrative contexts (van Hout 2008) and to the lack of an explicit time interval of reference (RefT) in the experiment (Kazanina & Philips 2007). The present study investigates whether children's comprehension of Spanish IPF forms are affected by the discourse setting of the experiment, in order to know at what extent the anaphoric properties of IPF forms are problematic for children. A picture selection task was carried out with the same materials but in four different experimental settings: 1) in a narrative without RefT; b) in a narrative with a durative RefT; c) in a narrative with a punctual RefT and d) in an out-of-the-blue context. In the experiment, subjects had to relate IPF telic predicates to pictures of complete, incomplete or ongoing events. 37 five year-old children were tested. First, the high error rates (<35%-57%> across conditions) show that five-year-olds may have difficulties interpreting the anaphoric meaning of IPF. Second, the fact that the comprehension of Spanish IPF pretérito imperfecto improves (1) when no narrative is included in the experiment (55% target responses in the out-of-the blue context vs. 43% target responses in the narrative without RefT) and (2) when a RefT is provided in the narrative (64% and 65% target responses with punctual and durative RefT) confirms that difficulties can be overcome by providing a RefT in a narrative task or by testing aspect in a non-narrative context.
Kazanina, N. & Philips, C (2007) A developmental perspective on the Imperfective Paradox. Cognition 105(1):65-102.
van Hout, A.(2008) Acquiring perfectivity and telicity in Dutch, Italian and Polish. Lingua, 118 (11):1740-1765.

Other (please, specify in the box below)
Artificial language learning
Syntax

Artificial grammar learning in infants and songbirds: What is shared, what is learned?

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Levelt, Clara C., Leiden University Centre for Linguistics
Spierings, Michelle J., Institute of Biology Leiden
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Abstract

Seven-month-olds have been shown to discriminate grammars XYX, XYY, or XXY and generalize them to novel linguistic input (1). We extended on these findings by testing six- and nine-month-olds and zebra finches, using zebra finch song elements rather than speech. Infants were tested in a visual fixation paradigm, and birds were tested in a go/no-go paradigm. Both groups were trained on one of two grammars (XXY or XYX), and were then tested on both grammars. All participants were tested in three test conditions (mixed): Condition 1 included elements heard in all positions during familiarization, recombined into novel triplets during testing; Condition 2 had elements heard in training in one position, but presented in a novel position during testing; Condition 3 included novel elements.

Six-month-olds show no preference in Condition 1, but show a trend for the consistent grammar in Condition 3, and a significant preference for the consistent grammar in Condition 2. Nine-month-olds show no preference in Conditions 1 and 2, but show a significant preference for the inconsistent grammar in Condition 3.

The zebra finches' behavior was closest to that of six-month-olds: while they showed no trace of generalizing the training grammar (Condition 3), they too were sensitive to the position of the song elements (Condition 2).

The similar patterns in the zebra finch and six-month-old suggest a shared bias to attend to positional cues. Both groups may compensate for their limited working memory by using this perceptual primitive (2) as a tool for grammar discrimination, which nine-month-olds do not use. Moreover, both infant groups show no preference in Condition 1 but do in Condition 3, indicating that without feedback about which level of processing is necessary, infants may fail to go as far as the syntactic level in their processing unless the input indicates that it is necessary.

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Language development in atypical populations
Language, general

How high is the risk of language misdiagnosis in multilingual children? – New evidence from early second language learners of German

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Abstract

Background: Children with undiagnosed Specific Language Impairment (SLI) are at risk for poor academic and social achievement. Studies on monolinguals and bilinguals indicate that this underdiagnosis (=diagnosis of SLI-children as typically developing (TD)) exists along with overdiagnosis (=diagnosis of TD-children as SLI) (Botting et al. 1997; Paradis 2007). However, it is unclear how judgment accuracy has been influenced by the profession of the person responsible for diagnosis. The present study addressed this question by examining over- and underdiagnosis of eL2-learners of German by pediatricians, as in Germany diagnosis of SLI and assignment to language-intervention is in their hands.
Method: 27 eL2-learners of German (mean age: 4;6 years, mean AoO: 2;10 years) and 19 pediatricians participated. Children's nonverbal IQ and hearing abilities were age-appropriate. Children were seen by a paediatrician and given a language diagnosis as required by the examination procedures for ages 4-5. Afterwards, pediatricians were asked about their diagnosis (impaired/unimpaired). We tested all children with the standardized test LiSe-DaZ (Schulz & Tracy 2011), using the norms for eL2-children and identified them as SLI, if performance was T<40 in at least 2/9 subtests, and as TD otherwise. Pediatricians were not informed about children's test-results. Pediatricians' judgments were compared with the test-result and categorized as overdiagnosis, underdiagnosis, or correct-unimpaired, correct-impaired.
Results: Pediatricians classified 4/27 eL2-children as impaired and 23/27 as unimpaired. The test identified 7/27 eL2-children as SLI and 20/27 as TD. The cross-classification yielded correct diagnoses for 67% (18/27) of the eL2-children. Underdiagnosis was higher (6/27, 22%) than overdiagnosis (3/27, 11%). Specificity of pediatricians' diagnosis (17/20, 85%) was higher than sensitivity (1/7, 14%).
Conclusion: Our study confirms the finding of frequent misdiagnosis of multilingual children for the profession of pediatricians, who seem ill-prepared for identifying SLI, despite their responsibility for diagnosis and subsequent intervention.

First language acquisition
Morphology

Children's comprehension of number inflections in German

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Abstract

Studies of the acquisition of verb-inflection in English-speaking children (e.g. Theakston et al. 2003) have found productive use of the third person singular morpheme in children aged 3;0. However other studies (e.g. Johnson et al. 2005) showed in a comprehension task that processing verb inflections to infer the correct subject number does not take place till between 5;0 to 6;0.
Studies suggest that German-speaking children between 2;0 and 3;0 productively use verb inflections but comprehension in experimental studies is not till 4;0 (Brandt-Kobele et al. 2010). We tested the comprehension of singular-plural contrasts in German noun and verb inflections. 24 children were tested in each of two age groups of 2;6 and 3;0. In a picture-pointing task, children had to point to one of two pictures according to the number information on the noun. For verbs, prompts (Show me how she/they paint/paints) were used to ask children to act out an action with (an) object/s. Since, in German, 3rd person singular feminine and 3rd person plural personal pronouns are homophones (“sie”), the only way to solve the initial ambiguity is by processing the verb inflection. The results show that the children aged 3;0 comprehended singular and plural in nouns and the singular form in verbs. We discuss the results in terms of comprehension-production asymmetry.

First language acquisition
Phonetics and phonology

Japanese-learning infants prefer “tabs” while French-learning infants prefer “bats”: Exploring crosslinguistic phonological development.

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Abstract

Previous studies have described the existence of a Labial-Coronal bias (LC), that is a tendency to produce words beginning with a labial consonant followed by a coronal consonant (i.e. “bat”) rather than the opposite pattern (i.e. “tab”). This bias has initially been interpreted in terms of articulatory constraints of the human speech production system (MacNeilage & Davis, 2000; Sato, Vallée, Schwartz, & Rousset, 2007). However, different typological studies have revealed the predominance of LC sequences in the lexicons of many languages (Vallée, Rousset, & Boë, 2001), opening the possibility that the LC bias is triggered by perceptual acquisition. The Headturn Preference Procedure was used to explore the origins of the LC bias, testing Japanese-learning infants, a language that has been claimed to possess more CL than LC sequences, and comparing them with French-learning infants, a language showing a clear LC bias in its lexicon. First, a corpus analysis of Japanese IDS and ADS revealed the existence of an overall LC bias, except for plosive sequences in ADS, which show a CL bias. Second, speech preference experiments showed a perceptual preference for CL over LC sequences in 13- but not in 7- and 10-month-old Japanese-learning infants (Experiment 1). However, Experiment 2 revealed that 10- but not 7-month-old French-learning infants have a perceptual preference for LC sequences, which are more frequent in French, even when these sequences are produced in a foreign language (Japanese). These cross-linguistic behavioral differences reflect the differences in the properties of the lexicons of the two languages contrasted. Based on these results it appears that the emergence of the LC bias is related to exposure to a linguistic input having an LC advantage in its lexicon and an opposite CL bias can emerge if supported by the input.

Language development in atypical populations
Language, general

The Role of Gesture in the Language Development of High- and Low-Verbal Children with Autism

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Abstract

Gestures play an important role in language development (e.g., Bates, Thal, Whitesell, Fenson & Oakes, 1989). However, speech and gesture are poorly coordinated in autism (ASD; de Marchena & Eigsti, 2010). Nevertheless, with language development so heterogeneous in children with ASD, some may use gesture to facilitate later language while others may not. This study compares gesturing in typical development and ASD, and examines how early gestures relate to later language development.

Sixteen children with ASD (M age=32.67 months) were divided into high-verbal (HV-ASD) and low-verbal (LV-ASD) groups based on expressive language. Sixteen TD children (M age=20.02 months) were matched on language level to children with ASD. Mother-child interactions were video-recorded at four-month intervals and coded for gesture at visit 1 and children's vocabulary, word types & MLU at visits 2-6. Gestures were categorized by function: reinforce-speech, add-meaning-to-speech, disambiguate-speech, emphasize-speech, or occur with no-speech. Counts and ratios were calculated for each type.

Overall, children with ASD gestured less than their TD matches ($ts>3.00$, $ps<.02$). HV-ASD children produced fewer gestures than HV-TD children in the following subcategories: add-meaning-to-speech, disambiguate-speech, reinforce-speech, and no-speech ($ts>2.27$, $ps<.04$). They also had lower ratios of gestures to total utterances, words, and communicative acts ($ts>3.58$, $ps<.007$). The LV-ASD and LV-TD groups differed only in total gestures and no-speech gestures ($ts>3.01$, $ps<.019$). We regressed language measures at visits 2-6 on gesture measures from visit 1, controlling for visit 1 MLU & word types. Add-meaning-to-speech gestures positively predicted subsequent vocabulary in both HV-ASD ($\Delta R2=.357$, $p=.049$) and LV-ASD children ($\Delta R2=.068$, $p=.016$). Additionally, disambiguate-speech gestures predicted HV-ASD children's word types and MLU ($\Delta R2>.158$, $ps<.037$).

Children with ASD can become highly verbal despite gesturing less than their TD peers. However, regression analyses nonetheless indicate that gesture influences their later language development. These findings add to a growing body of literature showing that gesture bootstraps language development in children, albeit sometimes in atypical developmental trajectories.

Cultural and social factors in child language development
Semantics and lexicon

24-month-olds learn unconventional labels in relevant contexts

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Abstract

A large body of empirical research has demonstrated that preschoolers are highly selective word learners. They will, however, demonstrate flexibility in their selective learning, if they are given a reason to think a label might be relevant in the current context. Here we examined whether 24-month-olds also demonstrate flexibility in their selective word learning. Specifically, we asked whether infants acquire an unconventional object label, such as a nonlinguistic sound, if they have reason to suspect that the label will be relevant in the current context. In Experiment 1, we familiarized 24-month-olds to an actor whose object-directed actions were either conventional (e.g., pretended to eat soup with a toy spoon) or unconventional (e.g., used the spoon to brush her hair). The actor then labeled a novel object using a conventional label (i.e., a word) or an unconventional label (i.e., a sound). In Experiment 2, 24-month-olds were familiarized to an actor who acted on object in an unconventional manner, but were taught an unconventional label by a second speaker who was not present during the familiarization period. In Experiment 3, we familiarized 24-month-olds to an actor mislabed a familiar object. The actor then labeled a novel object using a conventional label (i.e., a word) or an unconventional label (i.e., a sound). Performance on a comprehension test revealed that infants correctly extended word labels when the labels had been offered by a conventional or unconventional actor but not when offered by an inaccurate speaker. Infants only learned sound labels when an unconventional actor provided the labels. This is the first evidence that toddlers, like preschoolers, will learn unconventional labels if they are given reason to suspect such labels will be useful. Results will be discussed in the context of relevance theory.

Child bilingual language development
Semantics and lexicon

Bilingual and monolingual acquisition of adjectives: same output, different strategies?

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Abstract

The acquisition of adjectives is particularly challenging. Research with monolingual English-speaking preschoolers has revealed their reliance on multiple cues (Hall et al., 2010). The present study widens the perspective by exploring the cues for adjective learning used by bilingual and monolingual German-speaking children. We do so using behavioral and neurophysiological methods.
The participants were 58 bilingual and 57 monolingual children aged 3 and 5. Their level of comprehension of real adjectives was tested through a specially developed assessment tool. At both ages, children also participated in a forced-choice adjective-learning task. EEG (electroencephalography) and NIRS (Near-Infrared Spectroscopy) data were collected for the five-year-olds at the same time that they performed the behavioral task.
In the behavioral task a novel pseudo-adjective's property interpretation was supported (1) through the Mutual Exclusivity Constraint, a word learning principle (MEC; Markman 1993), (2) through a pragmatic cue given by a descriptive gesture, or (3) through its syntactic embedding. Unlike an earlier finding of a bilingual advantage in three-year-olds' novel English adjective learning (Yoshida et al., 2011), we found no differences between bilingual and monolingual three-year-olds. Five-year-old monolinguals were more likely to adhere to the MEC than bilinguals. In line with this behavioral result, EEG and NIRS data showed neurophysiological group differences in the MEC-condition. The pragmatic and the syntactic conditions revealed similar behavioral responses for bilingual and monolingual 5-year-olds, but EEG and NIRS results indicated that their cerebral processing differed.
Results of the assessment instrument on real adjective comprehension were the same for bilingual and monolingual children at both ages.
Taken together, this study shows that bilingual and monolingual children may differ in their adherence to different learning strategies that support German adjective acquisition, but that the output of the learning process – adjective comprehension – is similar across both populations.
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Other (please, specify in the box below)
Teaching and learning oral language
Pragmatics

Assessing oral language teaching in kindergarten and elementary schools using an observation tool

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Abstract

Oral language teaching in Spanish schools has not been so systematic and focused on formal aspects. If our aim is for students to become competent in oral language and able to understand and construct oral texts adjusted to different contexts, situations and audiences, inside and outside school, programs of all subjects should include and explicit oral language objectives and contents. We present normalization results of Assessment scale of oral language teaching at school (Escala de VAloración de la Lengua Oral en contexto Escolar, EVALOE), formed by three subscales (context and communication management, instructional design, functions and communicative strategies), and by a semi-structured interview. The aim of the scale is to assess how teachers teach oral language in their Math, Sciences or other school subjects and to be able to initiate reflection and discussing processes with them to introduce changes in their teaching practices. 35 schools participated in our study and 42 professionals as observers (26 speech therapists, 8 educational psychologists, 6 teachers and 2 researchers). They carried out 85 observations, 40 in kindergarten and 45 in elementary schools. Results from the subscale's items analysis show that teachers can improve their practices in oral language teaching in different aspects. There are no relevant differences between the three subscales and between the observations carried out by the different professionals. Nevertheless, the interviews analysis shows that there are important differences between the professionals in respect to their conceptions about oral language teaching and learning at school. Concluding, the EVALOE is a useful instrument to know teachers conceptions about oral language teaching and learning, know how they teach oral language in their classes, as well as initiating interventions in schools.

Child bilingual language development
Language, general

The affordances of peer tutoring for second language acquisition by kindergarten children

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Abstract

Children's peer interaction constitutes a double opportunity space: It's a meaningful and relevant context for children's co-construction of their social worlds and fosters language learning (Blum-Kulka and Dvir-Gvirsman, 2010). Second language (L2) acquisition in kindergarten children is a prolonged and complex process requiring both explicit teaching and informal peer interaction (Blum Kulka and Gorbatt, in press). Children's peer tutoring is a combination of both (Barnard, 2002). The present study explored how peer tutoring in kindergarten provides an interactional environment that encourages children's L2 vocabulary enrichment, and sentence pattern use.

A group of six 5-year-old immigrant Russian speaking children acquiring Hebrew participated in a playful food preparation activity using vegetables to "make faces" upon slices of bread. One of the children was trained by the teacher prior to the activity to assume the tutor role.

The tutor used cards, each showing one face-part, to elicit naming and mark the activity sequence, i.e. laying one face-part after the other upon the bread slices. After completing the task, the children recorded upon a second set of cards with vegetable illustrations the face-parts they created. These cards, which constituted graphic texts, were later "read" by the children.

Discourse analysis of the video-recorded interactions revealed several ways in which peer tutoring offered affordances involving extended interactions in second language: 1) children cooperated with the tutor during the activity while involved in extended languge interactions; 2) the activity structure afforded numerous rehearsals of the target vocabulary and sentence patterns, in a flexible rather than rigid manner; 3) gestures and graphic texts supported children's verbalizations by aiding word retrieval and allowing them to produce longer stretches of discourse including the recently rehearsed sentence patterns and words.

First language acquisition
Phonetics and phonology

Potential trajectories in allophonic acquisition: a dynamic approach

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Abstract

The vast majority of works on child language phonology production focus on phonemic patterns. Interestingly, recent work has addressed the role played by sociophonetics in child language acquisition showing that variation plays an important role in acquiring an ambient language (Foulkes , Docherty , Watt. 2005; Khattab 2011; Foulkes & Vihman 2013). In this paper we will consider the acquisition of allophonic variants in Brazilian Portuguese (BP). We adopt Dynamic System Approach (Thelen & Smith, 1994) and Exemplar Models (Pierrehumbert 2001, 2003) to develop our analysis. Data comes from a longitudinal study with four monolingual children who were only exposed to BP, natural and permanent residents in Belo Horizonte (state of Minas Gerais). We will focus on the acquisition of alveopalatal affricates which are considered to be allophones of alveolar stops. Thus, affricates occur before a high front vowel [i] and alveolar stops occur in the other environments. Participants were audio and video-recorded monthly, for half-hour free-play with caretaker-child interactions and researcher-child interactions. All identified words were transcribed and submitted to a careful acoustic analysis. The results showed significant difference between the four children in trajectories in acquiring affricates. This result is in accordance with findings in other areas of knowledge which display a nonlinear pattern (Thelen & Smith 1994). We argue that the nonlinearity in affricate acquisition in BP is a consequence of the reorganization of exemplars in the child sound system. We also show that the lexicon plays an important role in organizing segmental phonology. Thus, the various pathways children follow towards the acquisition of phonology provides evidence for a language acquisition model where phonetic detail and lexical organization combine to promote phonological grammar.

Literacy and language
Pragmatics

Cooperation between preadolescents through series of stories in natural conversation

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Abstract

This paper presents an analysis of series of stories (story clusters) within natural conversation among preadolescents, based on a broader study of cooperation among young children in storytelling. The study makes use of the ethnographic linguistic approach, and is based on quantitative means for the analysis of the stories.

The aim of the paper is to study cooperation from three perspectives: means of embedding the story within the conversation, types of responses of interlocutors within the story, and the role of the sequential stories themselves in creating cooperation. The analysis is based on the development, expansion and integration of existing classifications in the literature of: embedding tasks, responses within stories, and of the goals that stories can play in conversations.

In this paper we:

1. show that the understanding of cooperation needs to take into account these three dimensions and the interaction between them;
2. illustrate that young children (aged 11) are aware of and are capable of using a range of instruments of cooperation between the storytellers (and thus the rules of pragmatics);
3. demonstrate that cooperation could include discrepancies and challenges between interlocutors, and not only support of the thematic or personal roles of the story;
4. show how the goal of the story influences the nature of the cooperation;
5. show how cooperation between the interlocutors contributes to the thematic development of the conversation.

We conclude that the story clusters serve as an arena for collaboration within each of the single stories, as well as for collaboration through the linkage of stories within the cluster.

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First language acquisition
Semantics and lexicon

Does the ordering of givenness and newness matter in early word learning?

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Abstract

Caregivers tend to place new information at the end of an utterance in child-directed speech (CDS) in addition to accenting it (Fernald & Mazzie, 1992). However, recent work has shown that young children prefer new-before-given order when syntax is not involved, opposite to adults' preference for given-before-new order in both adult-direct speech and CDS (Narasimhan & Dimorth 2008). The current study investigates the role of givenness-newness ordering in word learning. Specifically, we investigated whether 24-month-old Dutch children could learn a new word (conveying new information) more successfully when it followed a familiarized word conveying given information) (new-before-given) than the other way around (given-before-new).

Two pilot experiments were conducted on noun learning (NL, hereafter; N=5) and verb learning (VL, hereafter; N=4), adapted from Grassmann & Tomasello (2007) Children received two conditions: new-before-given and given-before-new. Each condition had four phases: (1) Familiarization: children were familiarized with a novel noun(VL)/verb(NL), serving as the given information; (2) Teaching: children were taught a novel verb(VL)/noun(NL) in sentences like "De fek bikt nu"and "Nu bikt de dap" (with the target word accented), in which the order of givenness and newness was manipulated. (3) Neutral language training: children were taught a distractor verb(VL)/noun(NL) without any verbal cues and (4) Testing: It was counted correct if s/he picked up or pointed to the target object in NL or acted out the target action in VL.

The correctness and reaction time in testing were measured. Preliminary results suggest that 4 children learned the noun in the new-before-given condition but 3 in the other condition in NL. The reaction time in new-before-given (M=2.24s) was shorter than the other (M=4.8s). These results suggested that new-before-given may facilitate noun learning. However, only one child succeeded in the verb learning, which might result from the difficulty in verb learning or the act-out task.

(300 words)

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First language acquisition
Phonetics and phonology

Emergence of Japanese infants' preference to a highly frequent, but universally disfavored phonotactic pattern

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Abstract

It has been argued that there exists a universal phonotactic bias preferring a Labial-Coronal (LC) pattern; beginning with a labial consonant followed by a coronal consonant (i.e. "bat") rather than the opposite CL pattern (i.e. "tap") in speech production [1]. More recently, a similar bias has been found to emerge in French infants between 6 and 10 months of age, suggesting that the perceptual equivalent of this bias can be acquired on the basis of the speech input [2]. A question remains, however, whether French infants' preference is solely based on input frequency, or is limited to a universally favored pattern.
If infants' perceptual bias can be acquired solely on the basis of input frequency, a preference should be observed even to a pattern that is not universally favored, as long as it occurs frequently in infants' native language. The present study tested this prediction in Japanese infants. In Japanese plosives, the Coronal-Dorsal pattern occurs more than 5 times as frequently as LC or CL patterns, while the CD pattern occurs less frequently than the other patterns in many languages of the world.
Japanese infants at 7 and 10 months of age were tested in the Head-Turn Preference Paradigm with nonsense 2-syllable words that either followed the CD or CL pattern. The results revealed that even though infants showed no preference at 7 months of age, 10-month-olds showed significantly longer listening times to the CD pattern over the CL pattern. This provides strong evidence to support that infants can acquire a preference to a particular phonotactic pattern that occurs frequently in their input, even when such a pattern is language specific and not universally favored.
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Literacy and language
Language, general

Do children with differing levels of phonological awareness (PA) ability make different types of errors on a PA test?

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Abstract

Problem: In recognition of the contribution phonological awareness (PA) has for reading success (Moats, 2009), assessment and instruction of PA has become a focus in the early school years. Currently, a child's total score compared with same-aged peers on particular PA tests is used to measure children's PA skills and intervention focuses on specific tasks. However, such intervention does not consider the types of errors children exhibit. For example, two children may receive the same total score on a test but may do so for different reasons. There currently exists no published research on the types of errors children make on tests of PA. Goals: (1) identify the types of errors children make on a PA test, and (2) determine if there are differences in the types of errors made, and word position errors occur, by children with differing PA skill levels. Methods: Participants comprised 216 Grade 1 Canadian children who completed the Yopp-Singer Test of Phoneme Segmentation (Y-STPS, Yopp, 1995). Children were divided into three equal PA groups based on their Y-STPS total score (Low 0-8; Mid 9-14; High 15-22). Each phoneme in children's responses for the 22-test items was transcribed and coded for type of error and word position of error (initial, medial, final). Results: 22 error types were identified with 8 error types made by the Low PA group only. All 3 groups differed on the number of errors made on phonemes in the initial word position but only the Low group differed on the number of errors made on phonemes in the medial and final word positions. Conclusion: Examining errors children make in addition to total error considerations provides a more comprehensive understanding of children's strengths and needs and the ability to individualized intervention.

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First language acquisition
Semantics and lexicon

Thematic role assignment in Resultative Constructions in English- and Mandarin-learning children

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Abstract

Resultative constructions (RCs), which express a causal relation between two events, differ in English and Mandarin with respect to the interpretation of the object NP. Imagine a scenario where John wiped some dirt off a table, cleaning the table but inadvertantly dirtying the cloth. Here, English allows (1) but not (2). Mandarin, however, allows both. The object NP must be the patient of the main verb in English, but can have other interpretations in Mandarin.

(1) a. John wiped the table clean.
b. Zhangsan ca ganjing le zhuozi.
Zhangsan wipe clean LE table
(2) a.*John wiped the cloth dirty
b. Zhangsan ca zang le mabu.
Zhangsan wipe dirty LE cloth

Using a noun-learning task, we show that 2.5-year-old English- and Mandarin-learners are aware of the language-appropriate interpretations of the object NP.

Participants (n=96) saw causative events, where an agent uses one novel object (designated instrument) to act on another (designated patient), resulting in both objects entering the same result state. Meanwhile, participants heard RCs like 'She bumped the teeg awake', where the object NP was a novel word. After this familiarization, children were shown the instrument and the patient on separate sides of the screen, and we asked "Which one is the teeg"? Reference-resolution of the "teeg" at test indicates thematic role assignment during familiarization.

We found English-learners more often chose the designated patient than the designated instrument as the referent, whereas Mandarin-learners chose the two equally often. An adult control experiment revealed the same pattern.

These findings show that by 2.5-years of age, children are beginning to learn the interpretation of NPs in complex clauses. They also suggest potential difficulties for theories of verb learning and syntax learning that presuppose a one-to-one mapping between a verb's thematic relations and the number of NPs in a clause containing that verb.

Literacy and language
Pragmatics

"My room is a rectangle." Strategies in written and spoken room descriptions of third, fifth and ninth graders

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Abstract

During the first years of school, the text type “description” forms a prominent part of the curriculum. Except for narrative texts there is a considerable lack of age and development-based references and guidelines regarding the acquisition of other text types in school children. Moreover, although the oral and written modality plays a significant role in an educational context there are remarkably few empirical studies that deal with this topic. This study addresses the following research questions:
(1) What kinds of strategies do children in third, fifth and ninth grade employ when they describe the room model?
(2) To what extent and in which ways do the written texts differ from the spoken ones?
45 students (15 each in grades three, five and nine) were asked to describe a model of a furnished teenager’s room. Each student first produced one text in the oral, then, a week later in the written modality.
Linearisation strategies including the texts’ introductions, coherence and perspective taking were analysed within the framework of a text production model developed by Stutterheim (1997). Students’ descriptions were found to vary greatly with regard to the strategies they employ when written and spoken texts were compared. The younger the children, the more likely they are to apply more simple strategies in their writing while they use rather complex strategies in their oral texts. With increasing age the differences in complexity decrease gradually and finally tend to even out.
Conclusively, younger children seem to be struggling with the demands entailed in producing a written text. This implies that writing a text takes up considerable processing capacity. These findings are discussed with regard to issues of limited capacity and the way they impact the way the different text forms are taught and tested in the educational arena.

Language development in atypical populations
Phonetics and phonology

Standardizing the new speech audiometric FinKon-Test

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Abstract

The poster presents data from an ongoing standardization process of a new speech audiometric test for hearing impaired children. The test focusses on the ability of children to discriminate phonemes that are important for the acquisition of German verb morphology, i.e. /s/, /t/ and /n/. It is a picture-selection task with three pictures: a test item that is presented by loud speakers, a phonological distractor and an unrelated distractor. Test item and phonological distractor are part of a minimal pair that only differs in the word- or syllable finale position (e.g. Huhn vs. Hut). A successful pilot study has shown that hearing impaired children have specific problems with the discrimination of these phonemes (Hennies et al. 2012). Since none of the existing speech audiometric tests in German allows for a specific evaluation of a child's ability to differentiate between phonemes in word- and syllable-finite positions, the test has been adapted for the use in a clinical audiometric setting (Stropahl & Hennies 2011). In order to calculate group specific age norms a sample of 48 TD-children, 67 HI-children (hearing impaired with hearing aids), and 24 CI-children (hearing impaired with a cochlear-implant) at the age of 3 to 10 has been collected (as of 9/1/2013). Preliminary results indicate that TD-children still develop their phonological system between the age of 3 and 4 when they reach a correctness score of 90%. HI-children undergo a continuous improvement and manage to reach a similar correctness score at the age of 7, and CI-children show lower results with only a small gain over the years. If these results remain solid within the bigger norming sample, it might also help to improve intervention strategies in HI- and CI-groups.

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Literacy and language
Morphology

Acquisition of new words during the school years: the case of morphological decomposition

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Abstract

Several studies have shown that the ability to comprehend and produce complex vocabulary is directly related to academic success and reading comprehension (Zwiers, 2008). Previous studies have shown several ways in which children and adolescents learn new words, demonstrating that morphological decomposition is one of the most important strategies (Nippold, 2007). When a person encounters a new morphologically complex word, he/she can decompose it into its morphemes and infer the meaning from the parts. Based on these assumptions, the aim of this work was to analyze how children and adolescents obtain meaning from morphologically complex words through decomposition. The hypothesis was that the ability to decompose words into morphemes and to extract meaning from morphemes in order to obtain the meaning of the whole word is related to school grade and type of morphological composition.

Thirty children and adolescents pertaining to 5th, 7th and 9th grades (10 children per group) from a private school in Mexico participated in the study. Participants were administered two lists of words in order to complete three tasks: word recognition, word segmentation and meaning analysis of words and their morphemes. Words were obtained from science and history textbooks commonly used in Mexican schools. Lists of words were controlled by their morphological composition: prefix+root (re-forma/reform), root+suffix (fermenta-ción/fermentation), root+root (eco-sistema/ecosystem), and polymorphemic words (bi-carbon-ato/bicarbonate).

Results revealed differences between school grades in the ability to segment words into morphemes and to obtain the meaning of the word based on morphological decomposition. Older children were better on segmenting correctly roots and affixes. Younger children segmented words based on phonetic similarity with other words, rather than inferring the meaning from roots and affixes. Other differences due to type of words and morphemes were also found. Conclusions indicated that morphological analysis of words continues its development during later language acquisition.

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Cultural and social factors in child language development
Language, general

Shyness affects children's performance on word learning tasks

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Abstract

Word learning involves the exploration of novel objects and words within a social context. Discomfort and inhibition in relation to novel or uncertain social situations are understood to be the basis of shyness in children. In order to examine whether shyness can affect word learning performance, 30 two-year-old children took part in a fast-mapping procedure, based on Horst and Samuelson (2008). Across eight referent selection trials children were given experience of four new object/label pairings, by presenting an unfamiliar (novel) object alongside two familiar objects and asking the child to retrieve the novel object using a novel label (e.g. "where is the koba?") After a five minute break, children were then tested on their retention of the object/label pairings by presenting a target novel object alongside two foils (other novel objects presented in the referent selection trials) and asking the child to retrieve the target. The child's temperament was measured by asking their parent to complete the Early Childhood Behaviour Questionnaire (ECBQ; Putnam and Rothbart, 2003). Results showed that scores on the shyness scale of the ECBQ correlated significantly not only with retention of the object/label pairing ($p < .01$), but also the selection of the novel object during referent selection ($p < .05$). Furthermore, a median split administered according to children's scores on the shyness scale showed that shyer children remember significantly fewer object/label pairings than those with lower shyness ratings ($p < .01$). Shyer children were also on trend to select the novel object less frequently during referent selection trials ($p = .073$). These data indicate that the child's temperament can affect their performance in word learning tasks, and this may be due to the social nature of the experimenter-child interaction during the word learning task.

Language development in atypical populations
Language, general

Toddlers' verbal imitation abilities: what words are easier to say?

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Abstract

Problem: Verbal imitation is associated with word learning and vocabulary. Imitation is also a feature of interventions for late talkers. However, late-talkers (LTs) are poor at verbal imitation (e.g., Chiat & Roy, 2007). There is a need to determine whether characteristics of words influence LTs' imitation. Two characteristics are of interest: (1) phonological (sounds IN versus OUT of children's phonetic inventories); (2) lexical (specifically, neighborhood density [ND]). Schwartz and Leonard (1985) reported that new words containing IN sounds rather than OUT were spontaneously imitated more often. Stokes (2011) found that LTs learned to say words from dense neighborhoods, but not sparse. To date, the influence of in/out and dense/sparse word characteristics on typically developing (TD) and LT's elicited verbal imitation of novel words has not been considered. Research Questions: 1) Do TD and LT 2-year-olds differ in their abilities to imitate novel words? Q2) Do phonological (IN/OUT) and lexical (ND) characteristics influence toddlers' abilities to imitate novel words?
Methods: 16 toddlers participated (8 TD, 8 LT (2;0-2;11). LT had < 50 words, few word combinations and no other developmental concerns. All had cognition and hearing WNL. Participants were presented with eight CVC nonwords paired with a toy referent in context--a pragmatically-motivating animated elicited verbal imitation task with pre-recorded voice. Words were orthogonally contrasted with respect to IN/OUT sounds and dense/sparse neighborhoods (e.g., "parn" was IN-sparse; "lat" was OUT-dense). Accuracy was measured as percent phonemes correct.
Results: Q1) TDs verbal imitation was significantly more accurate compared to LTs ($p=.003$). Q2) For the TD group, there was no significant difference in imitation accuracy regarding phonological/lexical characteristics. LTs were significantly more accurate at imitating novel words from dense neighborhoods containing IN sounds, compared to words from sparse neighborhoods containing OUT sounds ($p=.04$).
Conclusion: Phonological and lexical characteristics influence late-talkers' verbal imitation abilities.

First language acquisition
Phonetics and phonology

Early sensitivity of 6- and 10-month old monolingual Turkish infants to vowel harmony

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Abstract

Problem Statement: Palatal [back-front] and labial [round-unround] harmony is a pertinent phonological feature in Turkish (Kabak and Weber 2013). Previous research has shown that 6-month old Turkish infants growing up in Germany preferred listening to two-syllabic palatal-harmonic non-word stems as opposed to dis-harmonic ones (van Kampen et al. 2008). Here, we investigate whether 6- and 10-month old monolingual Turkish infants growing up in Turkey prefer listening to palatal and labial harmonic or disharmonic stem-suffix sequences.
Methodology: The preferential looking paradigm was used. 6 harmonic and 6 disharmonic word lists were displayed to infants, randomly presented from left and right speakers. Orienting times were used as dependent variable. Age (6-, 10-months), harmony (harmonic, disharmonic), type of harmony (palatal, labial) were independent variables. Trial length was infant-controlled (1 s minimal looking/0.5 s looking-away). In the overall Mixed ANOVA (n=62) age and harmony type were between-subjects factors while harmony was a within-subject factor. For a sub-sample (n=19), longitudinal analyses could be performed.
Results: While the overall analysis over all 12 trials did not reveal any harmony-related effects, an age x harmony interaction was found in the first trial as well as in the first four trials (2 harmonic, 2 disharmonic): the 6-month olds preferred listening to harmonic words whereas the 10-month olds preferred listening to disharmonic words. This was mostly true for palatal harmony. Longitudinal analyses confirmed this pattern.
Conclusions: The results show that monolingual Turkish infants are sensitive to vowel harmony, in particular palatal harmony, from 6 months onwards already, in line with previous studies. Their preference pattern, however, changes over time, from a familiarity to a novelty preference. This change is consistent with the idea that initially infants extract the dominant, i.e., harmonic pattern, from their ambient language, whereas later, they pay more attention to non-conforming, i.e., disharmonic stimuli.

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Literacy and language
Syntax

Text processing in typically developing children and children with specific language impairment

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Abstract

Children with specific language impairment (SLI) tend to be described as children with difficulties in both text decoding and in reading comprehension (eg. Bishop & Snowling, 2004). It is expected that their problems with phonology and morphology/syntax will influence both the speed and the quality of reading. At the same time, this feature makes them recognisable in the educational context; in countries with low rate of preschool recognition of SLI children often being the first sign of their problems. However, the heterogeneity of this group is notorious and children with intact phonological and decoding skills that achieve good results in reading were found among SLI children (overview: Bishop et al, 2011). They might show mild deficits in continuous text reading and comprehension (Bishop et al, 2011) as well as in reading speed (Fuchs et al, 2001) but still be able to mask their impairment staying close to range of typically language developing children (TLD).
In this paper we argue that manipulating with syntactic features of the text might resolve this problem and promote text reading as a possible screening tool for SLI. An eye tracking study was conducted in order to test the reading quality, the speed of reading and the reading of complex syntactic features. Two types of text with the same content were constructed (two texts per type). Most complex structures were used only in one type of text. The complexity of structures was estimated according to previous research in Croatian and studies in child language as general.
Two groups (TDL and SLI) were tested (9;0 – 10;5). Results in speed of reading and reading quality (in terms of i.e. number of regressions, fixation durations etc.) showed the interaction of group and text complexity. Analysis of reading of complex syntactic structures partially confirmed estimation of structural complexity.

Child bilingual language development
Syntax

Who is the winner in the comprehension of Chinese topicalized clauses: movement or non-movement

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Abstract

There has been a long debate on whether topic structure in Chinese are derived by movement or not (Huang, Li & Li, 2009). Since children have been shown to have difficulties with instances of movement in which the moved element and the intervening element share features, we attempt to shed light on the movement/non-movement issue on topic structure from the acquisition perspective, by focusing on the comparison between topicalized clauses and main clauses. We investigate this issue both in Chinese-Italian bilingual and in Chinese monolingual children.

We tested 80 monolingual Chinese children (aged 3;0-6;11) and 68 Chinese-Italian bilingual children (aged 6;0-9;11), using a picture-sentence matching task. The stimuli included 8 topicalized clauses (1a) and 8 main clauses (1b).

(1) a. Zhe-zhi qingwa, laoshu zai da.
this-CL frog mouse DUR hit
'This frog, the mouse is hitting.'
b. Zhe-zhi xiaogou zai da xiaomao.
this-CL dog DUR hit cat
'This dog is hitting the cat.'

The results showed that the monolinguals comprehended equally well topicalized and main clauses (χ 2(1) = 2.71, p > .05) and 6-year-olds performed at ceiling in both sentence types. In contrast, the bilinguals' comprehension of main clauses was at ceiling, but that of topicalized clauses was poor (χ 2(1) = 35.39, p < .001; Wald Z = -5.79, p < .001). Only 9-year-old bilingual children performed at the same level of 6-year-old monolingual children (Wald Z = -1.23, p > .05).

Detailed analyses suggest that bilingual children may treat topicalized clauses differently than monolingual children. The high level of performance by monolingual children is explained in terms of the status of topicalization in Chinese, which, we argue, involves base generation of the topic phrase and thus no movement is required. The significantly lower performance by bilingual children can be attributed to the influence of Italian topicalization where the movement is required.

First language acquisition
Semantics and lexicon

Development of using lexical tone details in word learning of Mandarin-learning infants

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Abstract

Infants discriminate consonant details by 10-12 months of age (Kuhl et al., 2006), but learn phonetically similar new words at 17-20 months of age (Werker et al., 2002). Lexical tones are essential phonetic units in Mandarin. Mandarin-learning 12-month-old infants easily distinguish acoustically dissimilar lexical tones, but are confused with acoustically similar lexical tones. The goal of this study was to examine whether Mandarin-learning infants use the lexical tone detail to learn phonetically similar words.

Method. Participants were 13- (n=15), 15- (n=13), 17- (n=16), and 20-month-old (n=14) Mandarin-learning infants. The speech stimuli were two words (/yi1/-/yi1/ vs. /yi4/-/yi1/) constructing a lexical tone pair (level tone, Tone 1, vs. fall tone, Tone 4). Both tones exhibit similar pitch height and construct an acoustically similar pair. Visual stimuli were a triangular toy, a spherical toy and a castle toy, moving on a 20" TV. The switch paradigm of word learning contained pre-test, habituation, test, and post-test phases. Pre-test and post-test phases presented the same audio-visual stimulus: "Hello! How are you?"+ castle. Habituation phase included A (" /yi1/-/yi1/"+ triangle) and B ("/yi4/-/yi1/"+ ball) trials presented alternately in 10 times. Habituation criterion was met if the looking time had 35% decrement from the beginning through to the end of the habituation phase. The test phase consisted of two Same trials (A and B) and two Switch trials ("/yi1/-/yi1/"+ ball and "/yi4/-/yi1/"+ triangle). The stimuli-presenting order was cross-subject counter balanced.

Results. The results of one-way ANOVAs indicated that 17- ($p < .05$) and 20- ($p < .01$) month-old infants looked longer on Switch trials than Same trials, but trial effect was not significant in 13- and 15-month-old infants. In conclusion, infants use the lexical tone detail to learn new words around 17 months; this developmental trend is similar to use the consonant detail in word learning.

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First language acquisition
Pragmatics

Preferred Argument Structure in Mandarin Caregiver Speech

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Abstract

Preferred Argument Structure (PAS), as formulated by Du Bois (1987, 2003), concerns the interaction between information status, referential forms, and grammatical roles (i.e., A, S, and O). One important hypothesis of PAS is that A is often given and non-lexical, and that S is aligned with O for accommodating new mentions and lexical mentions. In other words, PAS suggests an ergative S/O alignment of referent distribution. PAS has been extensively tested for adult speech cross-linguistically. Evidence that child language also exhibits PAS has been documented for Korean (Clancy, 2003), Venezuelan Spanish (Bentivoglio, 1996), and Inuktitute (Allen & Schröder, 2003). However, my earlier study of Mandarin child language showed that Mandarin child speech demonstrates an accusative A/S alignment, rather than an S/O alignment, casting doubt on the universality of PAS. In other to better understand the patterns observed in Mandarin child speech, this study investigated whether such patterns are a characteristic of the input given to children acquiring Mandarin by examining Mandarin caregiver speech. The data consisted of eight hours of natural conversations of two mother-child dyads video-recorded when the children were at the ages of 2;2, 2;6, 2:10 and 3;1.The data were analyzed in terms of clause types (transitive, intransitive), grammatical roles (A, S, O), referential forms (lexical, non-lexical), information status (new, given), and semantic classes (human, non-human). The results revealed that Mandarin caregiver speech demonstrates an A/S alignment. In other words, Mandarin-speaking children are sensitive to the patterns presented in the input since the age of 2;2. Further analysis revealed that the patterns may be explained by the factors related to the fundamental properties of Mandarin mother-child conversation. These properties include the frequent mentions of human referents in the A/S roles, the predominance of here-and-now topics in the discourse, and the constant need of attention management in the interaction.

Child bilingual language development
Pragmatics

The null pronoun as the learner default in the acquisition of child L1 and child L2 Basque

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Abstract

Linguistic phenomena at the syntax-discourse interface are principal loci of childhood delays. The uniform finding is that overt pronouns, typically used for expressing topic shift [+TS] as opposed to null pronouns [-TS], are overgeneralized to [-TS] contexts by children and attrited and L2 adults (Sorace 2011). The extended scope of the overt pronoun results in such pronoun being the learner-default, which contrasts paradoxically with the notion of linguistic-default, i.e. the null pronoun (Tsimpli 2011). Previous studies in one-referent predicates with 6-7-year-old L1 and L2 Basque children have shown a) a preference for null over overt subject pronouns regardless of [+/-TS] contexts in an acceptability judgment task and b) a non-adultlike general preference for coreference with the preceding subject, regardless of pronoun type in a PST. The current study is a follow-up of the latter in two-referent predicates, where again the two groups of children prefer to find an intrasentential antecedent for both null and overt pronouns. All Basque child data obtained so far converge in revealing that both child groups show an immature knowledge of the discursive specificities of overt pronouns, consistent with child Italian and Spanish (Sorace et al. 2009; Shin and Cairns 2012). However, data do not face the paradox between the linguistic- and learner-default, which may be related to the fact that Basque is a threefold pro-drop language, allowing the omission of up to three arguments in contrast to Romance languages where only subjects can be dropped. In addition, the importance of the input in the acquisition of the discursive features of pronouns is compatible with a) the less adultlike interpretation of overt pronouns by L2ers compared to L1ers and b) with the convergence of the null pronoun as the linguistic-default in target Basque and as the learner-default in the developing grammar of Basque.

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Child bilingual language development
Syntax

The Production of Anaphoric Direct Object in Simultaneous Brazilian Portuguese and English Bilinguals: analyzing cross-linguistic influence

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Abstract

This research deals with Bilingual First Language Acquisition (BFLA) investigating the cross-linguistic influence concerning the production of anaphoric direct object (ADO) in bilinguals acquiring Brazilian Portuguese (BP) and English simultaneously since birth. BP and English present different parametric choices concerning ADO: BP allows null objects, specially for [- animate; - specific] antecedents. BP monolinguals usually show up to 80% null objects in early language (Lopes, 2009). English rate for object omission seems to be around 10% (Hyams & Wexler, 1993). Although literature in BFLA highlights that languages would be acquired independently (De Houwer, 1990), it has been argued that some structures may be vulnerable to transfer in the course of BFLA (Müller & Hulk, 2000; Strik & Pérez-Leroux, 2011). This study observes the emergence of ADO in a longitudinal corpus composed of 3 bilinguals exposed to 1P/1L method (one parent, one language): N. (02;01,18 to 03;07,11), L. (02;05,27 to 03;01,01) and A. (03;02,06 to 03;08,25). Each session was transcribed and each instance of ADO was analyzed and classified into: DP, pronoun, null object and null deictic. Considering that each child is in a different stage of development, a clear picture of development seems to emerge: N. shows in the initial sessions lots of imperatives which display null deitics. Pronouns pop up in English by the age of 2;05;02. L. prefers using DPs in both languages and pronouns never appear in BP; by 02;06, clear instances of anaphoric null objects appear in BP and few instances in English. A. is the most fluent child; he presents DPs, pronouns and even anaphoric null objects in both languages since the first session. The data shows transfer from BP to English, which is discussed in terms of Muller & Hulk's and Strik & Perez-Leroux's accounts.

Child bilingual language development
Morphology

Case acquisition in bilingual Dutch-Russian children

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Abstract

Children learning Russian in a monolingual setting typically acquire the basis of the Russian case system before age 3;0 (e.g. Cejtlin, 2009). In contrast, the acquisition of Russian case morphology is known to be delayed in children that acquire Russian outside of Russia in a bilingual setting; for example, Dutch-Russian children still make many errors in case production around age 6 (Peeters-Podgaevskaja, 2008). In this study the interaction of case with word order alternations in Dutch-Russian bilinguals will be explored taking into account the Amount of Input (AoI).

Using the Russian Sentence Repetition task for young children (R-SRT) 29 simultaneous Dutch-Russian bilinguals (mean age: 5;0) and 41 Russian monolinguals (mean age: 4;8) were tested. The R-SRT consists of 48 grammatical sentences varying in length (9-14 syllables) and construction-complexity (12 different sentence types). Although a correct understanding of a sentence always requires case information, case endings in sentences with a non-canonical word order (NCWO) are particularly important: unlike sentences with a default word order, a correct interpretation of those sentences relies on case morphology and cannot be predicted from the word order. The rationale of an SRT test is children will repeat a construction less accurately if acquisition is not complete (Chiat et al., in press). More errors are expected in more complex constructions, so for example in sentences with NCWO and object/subject relatives (OR/SR)).

As expected, the monolingual children significantly outperform the bilingual children in repeating case morphology on all sentence types. The bilingual children make many errors on NCWOs and SR's, performing at floor for OR. The monolingual children also made significantly more errors in these sentence types, particularly ORs. This confirms the expectation that complexity affects processing for case. Moreover, the bilingual children with more exposure to Russian (higher AoI), performed better than children with a lower AoI.

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First language acquisition
Semantics and lexicon

Children's knowledge of structural dependency in the semantic interaction of logical words

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Abstract

We examine preschool-age children's knowledge of structural dependencies in semantic interactions among downward entailing (DE) expressions. A DE expression (e.g., 'every'-NP) validates a logical inference from a set-denoting expression (e.g., 'dog') to its subset-denoting expression (e.g., 'white dog') (e.g., (1) entails (2)). Crucially, an 'every'-NP c-commanded by another DE expression (e.g., 'no') validates a reversed, subset-to-set logical inference ((4) entails (3)), while we see a set-to-subset inference between (5) and (6) ((5) entails (6)), where the co-occurring 'no' does not c-command the 'every'-NP.

(1) Every dog barked.
(2) Every white dog barked.
(3) No boy fed every dog.
(4) No boy fed every white dog.
(5) The boy with no hat fed every dog.
(6) The boy with no hat fed every white dog.

For an entailing-entailed sentence pair, there is a context making the entailing sentence false and the entailed one true; e.g., (1) is false but (2) is true, if all the white dogs, but not the brown dogs, barked. Previous Truth Value Judgment Task (TVJT) studies found that children are aware of the opposing truth values for both (i) the entailing-entailed 'every'-sentences as (1-2), in which a set-to-subset inference is created ((1) entails (2)), and (ii) the entailing-entailed 'every'-sentences, with 'no' c-commanding 'every', as (3-4), in which a subset-to-set inference is created ((4) entails (3)).

These findings further predict children's awareness of the opposing truth values of entailing-entailed 'every'-sentences, containing non-c-commanding 'no' as (5-6). Our TVJT study revealed that, indeed, preschoolers know that (5) is false and (6) is true, when the boy with no hat fed all the white dogs but not the brown dogs, suggesting their awareness of the set-to-subset inference created between (5) and (6) ((5) entails (6)). Thus, our findings evidence children's awareness of structure-dependency in semantic interactions among DE expressions.

First language acquisition
Pragmatics

Prosody and discourse in French-speaking children: A longitudinal follow-up from 2 to 4;06 years old

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Abstract

Recent researches about children's discourse tend to show that as soon as 2 years of age, children are sensitive to discourse features. In various languages, studies show that linguistic units such as pronouns or determiners (Allen, 2003, Serratrice, 2005, Salazar Orvig, 2010) and syntactic constructions, such as presentational constructions or left dislocations (De Cat, 2002), vary regarding context and shared knowledge.

Researches about children's prosody in English (Halliday, 1967, Crystal, 1970), or in French (Konopczynski, 1991), tend to show that prosody is acquired early in development. If prosody has been related to first syntax (Veneziano, Berthoud, 1990, Martel, Dodanne, 2012), few researches study referential units pointing both discourse features and prosody. Our hypothesis is that young children's prosody varies regarding the level of shared knowledge with the adults and with interactional features.

Our longitudinal study follows up 3 children a longitudinal following from 2;0 to 2;6 and 4;0, to 4;6 years-of-age. We compare 2 situations of interaction: a snack and a game situation for a total of 216 minutes of analysed data. Prosodic analyses were made with PRAAT and prosograh of Mertens (2003).

Considering prosody as an autonomous phenomena, discourse and prosody were coded with two independent codings. All, and only, referential expressions – pronouns, lexical units and their determiners – were coded both in adults and children's discourse. We coded pitch contours (pitch accent, level pitch,...), vowel lengthenings and their location.

First results show that children produce more pitch accents than their adult's interlocutors. In children's discourse, referential units in one-word utterances show more pitch accents than the ones in longer utterances. Furthermore, as soon as 2 years old, children's prosody is sensitive to discourse and interaction. First mentions are more marked by pitch accents than further lexical or pronominal mentions and others' repetitions more than children's self repetitions.

First language acquisition
Morphology

Identification of compound constituents in Czech preschool children – the role of family size

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Abstract

Our research is aimed at determining the factors affecting the ability of preschool children (3–6 years, n = 34) to identify the constituents of compounds in Czech. The study by Krott and Nicoladis (2005) presented results suggesting a significant influence of constituent family size on child's segmentation of compounds in English. Our research adapts the original design with regard to the typological specifics of the Czech language. We investigate if the same effect appear despite of structural differences between languages, primarily despite of generally lower productivity of compounding and lower sizes of constituent families. We also hypothesize that other variables like type of compounding process, the child's knowledge of motivating words or constituent position in the compound may affect the segmentation.

Our design has three components: parental checklist, picture test and guided interview (using a puppet). The checklist is used to estimate the family size of each constituent for each child. The picture test is employed to determine child's knowledge of the target words. During the interview, children answer twenty questions like "Why is the thing X called 'x'?" Responses are scored according to whether children mention constituents explicitly or implicitly or whether they don't mention them at all.

In our sample, there was found an effect of knowledge of a motivating word and also an family size effect, i.e. the children were more likely to mention a constituent in their responses if they knew its motivating word and also if the constituent had a large family ($t(38) = -2.0431$, $p < 0.05$). Apparently, the size of constituent family can affects the child's language processing also in Czech – in a language with relatively small constituent families and different nature of compounding (more morphological).

Reference:

KROTT, Andrea – NICOLADIS, Elena (2005): Large Constituent Families Help Children Parse Compounds. Journal of Child Language 32, pp. 139–158.

Quantitative and qualitative input factors
Pragmatics

Why don't you learn it from the input? – a usage-based corpus-study on the acquisition of conventionalized indirect speech acts in English and German

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Abstract

Within traditional approaches, the interpretation of all indirect speech acts (ISAs) involves the consideration and rejection of the 'literal' interpretation. More recent cognitive approaches assume that utterances conventionally used as ISAs are entrenched as constructions whose 'indirect' meanings are directly associated with the respective forms (Stefanowitsch, 2003). This implies that the 'indirect' meaning should be acquired earlier than the 'direct' meaning in these cases.
Most developmental studies on ISAs are experimental and rely on a priori assumptions about which ISAs are conventionalized, failing to provide empirical evidence based on naturalistic data (e.g., Bucciarelli et al., 2003). Furthermore, previous research has mainly focused on English, raising the question of how ISAs are acquired cross-linguistically.
The current study addresses these issues on the basis of data from two high-density CHILDES-corpora, the English Thomas-corpus and the German Leo-corpus.
The focus is on two English constructions (Can I X?; Why don't you X?) and their German equivalents (Kann ich X?; Warum X Du nicht X?), all of which were coded for discourse function (n for English = 715; n for German = 175; Cohen's Kappa >0.8).
Analyses show that

- Can I X?, Why don't you X? and Kann ich X? are predominantly used as ISAs by the caretakers. Consequently, the children comprehend and produce the 'indirect' meaning earlier than the 'direct' one.
- Warum X Du nicht X? is predominantly used as a 'direct' speech act (i.e., a request for information) and is first comprehended and produced as such.

Further analyses will include data from other CHILDES-corpora to explore whether these findings reflect linguistic conventions on a more general level.

Overall, the study indicates that children are indeed sensitive to the degree of conventionality of ISAs in the input and that this factor therefore needs to be considered in developmental studies on ISAs.
(300 words)

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Child bilingual language development
Language, general

How young hearing children of signing parents modify their language and gesture use when interacting with deaf and hearing interlocutors?

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Abstract

In their bimodal-bilingual language acquisition hearing children of deaf parents, or KODAs (Kids of Deaf Adults), simultaneously acquire sign language that is based on visual-gestural modality and spoken language that is based on auditory-visual modality. It is challenging to study early language differentiation in children acquiring two spoken language because young children's utterances are often so unclear that it is difficult to detect which language a child uses at each moment. In bimodal development detecting language(s) is easier. Additionally, KODAs can combine words, signs and gestures in a diverse way.
The aim of the present study was to find out how KODAs were able to modify their language and gesture use as a function of their interlocutor's language. A further aim was to describe the process of early language differentiation of KODAs.
The language development of eight KODAs was observed every six months between 12 to 24 months of age in three different interaction sessions; first with their deaf parent, then with their deaf parent and a hearing adult, and, finally, with a hearing adult alone. The communicatively best 5-minute sequences were transcribed from each of the interaction sessions. The parents were asked to report on the children's spoken language and sign language skills with the Finnish version of the MacArthur Communicative Development Inventories.
It was found out that already from the age of 12 months onwards children were sensitive to the language their interlocutor used: they preferred manual modality (signs and gestures) when interacting with their deaf parent, and vocal modality (words and vocalisation) with a hearing adult. Additionally, with Deaf parent the children used a manual modality in a more diverse way than with a hearing adult. These findings bring new knowledge about language differentiation of bilingual children during the early phases of language acquisition.

Literacy and language
Language, general

The effect of an interactive vs. traditional reading method on children's comprehension

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Vencelova, Lydia, Bakomi CO

Abstract

The benefit of shared book reading on children's vocabulary has been demonstrated across numerous studies (Mol, Bus, & de Jong, 2009), but fewer studies have looked at the effect of shared reading on comprehension skills. We present a training study that evaluated the effectiveness of two reading programmes on comprehension skills: an interactive reading method promoting narrative comprehension and a traditional shared-reading method, with adults reading to children.

Two groups of typically developing children participated in the study: (i) an experimental group (n=10, mean age 6;2) which employed the interactive reading method, (ii) a control group (n=10, mean age 6;3) which employed the traditional reading method. Groups were matched on age and language skills as measured by sentence repetition and nonword repetition scores. The experimental group received two reading sessions, each lasting 30 minutes. The children were read a story and asked questions which focused on explicit and implicit information about the book they were read. Children in the control group were read a book once day for 15 minutes, but were not given questions. The children's performance was assessed with a narrative task and a comprehension task (de Sá, 2012) at pretest (Time 1) and after 9 weeks of intervention (Time 2).

The experimental group showed a significant gain with story-telling, story-retelling and listening comprehension, while the control group did not significantly improve on any measure. Our findings showed that the interactive reading method had a positive effect on children's comprehension and production skills with a large effect size from the intervention. The large effect found in our study and the fact it was conducted during school time without disrupting the curriculum in any way, points to the usefulness of this method in an educational setting.

De Sá, A. B. (2012). Fostering pre-schoolers' Narrative Comprehension through Inference Making and Story Reenactment Training (Unpublished doctoral thesis). Bethlehem, USA: Lehigh University.

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First language acquisition
Phonetics and phonology

Speaker dependency in rhythmic preference studies: do native preferences depend on native speakers?

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Abstract

At 4 months of age an EEG study has shown language specific-discrimination of different stress patterns (SW vs. WS) by German- and French-learning infants when presented with stimuli spoken by a German speaker (Friederici et al., 2007). However, when using the HPP and also presenting stimuli spoken by a German speaker, a native preference has only been found at 6 months, thus not yet at 4 months, and also only for German-learning infants, but not for French-learning infants (Höhle et al., 2009). English-learning infants show a native preference at 9 months, but not yet at 6 months, when presented stimuli spoken by an English speaker (Jusczyk et al., 1993).

Since different outcomes have been found for different languages, we compare the previous findings to infants learning rhythmically opposed languages, namely Dutch-learning infants (SW) and Turkish-learning infants (WS), using an innovative looking-while-listening eye-tracking procedure and presenting stimuli spoken by a Spanish speaker. Do Dutch- and Turkish-learning infants show a native rhythmic preference and at what age does this preference appear? In total, 90 Dutch-learning and 90 Turkish-learning infants aged 4, 6 and 8 months have been tested. The results of the Dutch-learning infants show that they present a native (SW) preference, which is strongest at 6 months of age. However, the Turkish-learning infants show a non-native (SW) preference, which is strongest at 4 months age.

We interpret these results in light of a study investigating Hebrew-learning infants at 9 months, showing that these infants present a native (WS) preference when presented with stimuli spoken by a Hebrew speaker, but a non-native (SW) preference when presented with stimuli spoken by an English speaker (Segal & Kishon-Rabin, 2012). We conclude that infants only present a native rhythmic preference when presented with stimuli spoken by a speaker of their native language, and otherwise show a ‘default’ SW-preference.

First language acquisition
Morphology

Input and production of a polysynthetic Australian language

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Abstract

Murrinh-Patha, spoken in Wadeye (Port Keats), is one of a very small number of Australian languages still being acquired by children as their first language. It is also one of Australia's most morphosyntactically complex languages, being highly polysynthetic with complex verbal predicates which are formed with discontinuous elements in the verbal word, and many of which are noncompositional semantically. For example, the Murrinh-Patha word word WURDAMnginthaDHAWIWEPERLwardagathu means means "then the two non-siblings, at least one of whom was female, spoke out in unison", with the two capitalised elements jointly providing the predicate 'speak out in unison'.

Murrinh-Patha raises many interesting questions for acquisition research. For example, Courtney and Saville-Troike (2002), investigating the acquisition of the polysynthetic languages Navajo and Quechua, found that children extracted the verb roots first, before acquiring affixes. Yet how are Murrinh-Patha children to do this when the verb root is itself complex and distributed across the verbal word?

In this poster, based on data collected in spontaneous interactions across multiple yearly fieldtrips between 2009 and 2013, we report on findings of a long-term project to investigate the input to and acquisition of Murrinh-Patha by children aged 2;6-8. We discuss the challenges raised by Murrinh-Patha in the context of first language acquisition research on other morphologically complex languages (e.g. Inuktitut, West Greenlandic, K'iche, Tzeltal, Mohawk and Sesotho) and present the findings of a study analyzing the verbal structures in input (i.e. adult speech) and production. For example, the adult utterance ngungu-WE-pirt-nu (I'll pull its head off) is produced as Ipirt-nu by a child at 2;5 who has isolated a lexical stem + epenthetic preceding syllable for stress. We demonstrate that an examination of the verbal structures in the input can provide clues to the learning hooks for children in their early language use.

Language development in atypical populations
Language, general

Specific effects of joint attention on language development: Lexicon and syntax

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Abstract

Some theories emphasize joint attention as central to language acquisition. Children with autism spectrum disorders (ASD) show varying success in language coupled with deficits in joint attention skills. Previous work, using standardized language scores, links high levels of joint attention with advanced language skills in both typically-developing (TD) children as well as those with ASD. The current study takes a longitudinal approach with high- and low-functioning young children to ask the question: How might joint attention help children learn specific aspects of language, particularly when joint attention might be impaired? We examined children's spontaneous speech and comprehension six times over two years. Fifteen children with ASD and 15 TD children were visited six times (visit 1, TD age = 20 months; ASD age = 33 months). We analyzed language production and joint attention behaviors during parent-child play sessions, and used intermodal preferential-looking to gauge their shape bias comprehension abilities. Longitudinal growth curve modeling allowed us to analyze change over time.

Joint attention development was positively related to lexical measures (word types and pronouns) in both groups; children who improved in joint attention produced more different word types and more pronouns (controlling for word tokens). Children's improving shape bias was predicted by their joint attention abilities. However, rate of increase in grammatical production (mean length of utterance) was not predicted by increase in joint attention. Growth in joint attention supports growth in lexical skills but not growth in grammatical production. It could be that children learn lexical items via joint attention, but that increasing utterance lengths require a level of abstraction that is not served by joint attention. These results give us a picture of the limitations that joint attention may have as a tool for language learning overall, and how that may hinder the language development of children with ASD.

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Cognition and language development
Morphology

Less is not always more:

Regularisation hinders learning of inflectional morphology in 9-year-old children

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Abstract

When faced with seemingly unpredictable variation of grammatical morphemes in the input, children tend to regularise their use while adults try to reproduce their distribution (Hudson-Kam & Newport, 2005). Consistent with the Less-Is-More hypothesis, this has been interpreted as evidence for the crucial role of child learners in creole formation and language change. However, in morphologically complex languages, many structures are not unpredictable but quasi-regular in that their use is determined by a variety of phonological and semantic cues. Our previous studies on Russian gender learning showed that adult native English speakers are able to acquire quasi-regular L2-structures through incidental learning although performance is affected by individual differences in non-verbal intelligence, verbal working memory capacity, and previous L2-learning experience. We also found that learning was superior for diminutives because the derivational suffixes render them more similar to each other thus aiding schema discovery. Here, we tested nine-year old English-speaking children's ability to learn and reproduce gender agreement for diminutive and simplex masculine and feminine Russian nouns over four sessions of training, and compared their performance to our previous findings from adults who had followed an identical training regimen. Unlike adults, children failed to learn gender agreement, exhibiting chance performance after training and during testing of novel nouns. Closer inspection revealed that children exposed to simplex nouns predominantly adopted a guessing strategy thus matching, albeit incorrectly, the distribution of masculine and feminine endings in the input. Children exposed to diminutives tended to favour one of the two endings – a strategy similar to the regularisation pattern reported by Hudson-Kam and Newport (2005). Perhaps diminutives, being more complex nouns, impose a greater burden on working memory thereby facilitating regularisation. More generally, we suggest that less is not more when learning quasi-regular structures from limited L2-input as regularisation may lead to erosion of morphological complexity.

Child bilingual language development
Language, general

The development of narrative competence across languages in dual-language learning Latino children

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Abstract

Narrative is a complex discourse skill, requiring children to employ both linguistic skills and social cognition, such as theory of mind (Hudson & Shapiro, 1991). Narrative competence follows a unique developmental trajectory (Uccelli & Páez, 2007) that has rarely been studied longitudinally in a sample of more than a few children, particularly for dual-language learning (DLL) children.

Thus, this study explored the development of narrative competence longitudinally and across languages with 125 low-income Latino children. Children narrated a wordless storybook in English and in Spanish at three time points over 9 months. Transcripts were scored for narrative coherence using a standardized rubric. Coherence and length were analyzed using Group Based Trajectory Modeling (GBTM), a semi-parametric application of finite mixture modeling designed to identify groups of individuals within a dataset that follow a similar developmental trajectory, where the number of groups is not known in advance (Nagin & Tremblay, 2005).

In terms of the number of words produced, GBTM revealed two groups with linear growth trajectories; in both English and Spanish, most children told fairly short stories, while a minority told longer stories. Further, joint trajectory analysis revealed that most children either maintained low productivity (79.8%) or high productivity (16.0%) across languages. In terms of coherence, GBTM showed two linear growth trajectories for English narratives; the majority (62.8%) told less coherent stories than the other trajectory group (37.2%). Girls were significantly more likely to belong to the trajectory group that told more coherent stories, while first language was not a significant predictor of group membership. There was only one linear growth trajectory for Spanish narratives.

In sum, children tended to be consistent in narrative production, but not in coherence, across languages. Results are discussed in terms of the increasing percentages of DLL Latino children in U.S. classrooms, and the need for practitioners to build on children's skills in both languages.

Word count: 293

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First language acquisition
Phonetics and phonology

The significance of isolated words in the input to infants

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Abstract

The importance for early lexical development of hearing words in isolation as compared with having to segment them from running speech is hotly debated (e.g., Brent & Suskind, 2001, Gerken & Aslin, 2005). Although several studies have shown that infants can segment words from continuous speech, this may not be the primary way that infants learn their first words. Brent and Siskind (2001) demonstrated that isolated-word frequency in input speech better predicts later word use than word frequency overall, while Junge et al. (2012) found more reliable 10-month-old learning based on isolated words than words heard in passages.

We tested the comparative effects of input word use in isolation and in sentence-final position on 12-month-olds' word learning. A picture book with animals whose names were unlikely to be familiar to infants (e.g., condor, dassie, pudu) was read by parents to their infants over 3 weeks. The animal names appeared in the book either in isolation or sentence-finally. Each infant was then tested using the Head-turn Preference procedure. In Experiment I infants were tested on (i) trained words heard in isolation, (ii) trained words heard sentence-finally, and (iii) phonotactically-matched untrained words. Results show a tendency ($F = 2.936$, $df = 1.4$, $p = .09$) for group differences in mean looking times. A follow up experiment (Experiment II), in which each infant, following the same exposure to the book, was only tested using two lists of words, either heard in isolation (i) or heard sentence-finally (ii), contrasted in each case with untrained words (iii), showed learning only for the words heard in isolation ($t = 3.49$, $df = 15$, $p < .01$) but not for words heard sentence finally ($t = .04$, df 15, ns).

Our study provides further evidence that isolated words may afford a 'critical wedge' into the speech stream.

First language acquisition
Morphology

Early acquisition of verbs in French: morphological cues in child directed speech (CDS)

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Abstract

Crosslinguistic research on the development of vocabulary in children identifies similarities in the path of the development and in the composition of the vocabulary in the second year of life. For many languages, French included, the composition of the early lexicon is marked by a nominal bias (ie inventory containing more nouns than verbs). To this imbalance are proposed 3 types of explanation: conceptual, linguistic (characteristics of languages and CDS) and pragmatic (contexts of production and the fact that the types of activity in which the interlocutors are engaged in can impact linguistic usage).
Our goal is to examine the linguistic and the pragmatic explanations in French CDS. Given the morpho-syntactic features of the French language, which tend to give a privileged place to nouns, we observe whether and how mothers attract their children's attention more on names than on verbs in two contexts of production, one favoring the production of names (book reading, BR) and the other that of verbs (playing with a doll house, TP).
Our corpus consists of 40 video recordings of 10 minutes each in which 20 monolingual French-speaking children aged 16-34 months are interacting with their mothers in two contexts (book reading / playing with a doll house). Mother's productions have been transcribed, coded and analyzed with the CLAN software (MacWhinney, 2000). In terms of syntax, we coded the position of nouns and verbs in the mothers' utterances. The morphological coding we performed provides measures of morphological complexity (average number of different types of morphemes nouns can accommodate as opposed to verbs) and morphological diversity (number of different forms that follow nouns or verbs).
Our results reveal that nouns are more salient than verbs. They are more frequently in final position and diversity of forms preceding nouns is less important than that of forms preceding verbs. Concerning verbs, no preference concerning utterance position emerged from the data and what precedes verbs is less systematic than what precedes nouns. However, a high systematicity is shown in what follows the verbs. Contexts, for these measures, play a limited role. To conclude, morphological and syntactical characteristics of French CDS seem to favor noun acquisition more than verb acquisition.
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Language development in atypical populations
Morphology

Acquisition of an agglutinating language by twins vs. singletons

F. Nihan Ketrez

Abstract

Twins are observed to go through the milestones of language development slower than their singleton peers. They also speak in shorter sentences, with less complex language, have a smaller vocabulary size and greater tendency for language disorders [Conway et al. 1980, Dale et al. 2000, among others]. Their delay is attributed to biological reasons such as low birth weight and psychosocial reasons such as relatively less time spent with the parents and less direct input. Information regarding twins's language development come from English or other European languages. In this study, twins acquiring a morphologically rich, non-European language, Turkish, are observed longitudinally between the ages 1;0 and 2;6 with the goal of investigating whether twinning has a negative impact on word length or morphological complexity.

10 children who have twin siblings and 10 singleton children, who do not have any siblings and who match the twins in terms of birth weight and gender, participated in the study. Their spontaneous interaction with their parents were videotaped at home with 15-20 days intervals, for 20-30 minutes in each visit. Twins were recorded together but only one of the twins, who was randomly selected, was included. Their speech was transcribed following CHAT conventions of CHILDES and their MLU (based on morphemes) was calculated for each month.

The results suggest that, overall, twins are observed to have shorter words. At age 2;0 while twins' MLU is around 2,0, singletons have MLUs around 3,0, suggesting that word complexity is one of such areas that is effected by twinning . Birth weight, independent of twinning has an impact on word size as low birth weight singleton children have shorter word lengths than their normal birth weight peers, although their vocabulary sizes are similar.

Child bilingual language development
Syntax

Cross-linguistic influence in relative clause comprehension in bilingual Cantonese-English children

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Abstract

Cross-linguistic influence (or 'transfer') in bilingual development is well documented (see Serratrice, 2013), occurring between both typologically related and unrelated languages. Using naturalistic data Yip and Matthews (2007) reported transfer in three Cantonese-English bilingual children, who used Cantonese grammar to produce prenominal relative clauses (RC) in English, a phenomenon attributed to Cantonese dominance. The current study investigated whether English-to-Cantonese transfer occurs in English-dominant Cantonese-English bilinguals. Twenty-six Cantonese-English bilinguals (Mage = 8;11, SD = 2;6) and 28 monolingual Cantonese-speaking children (Mage = 7;3, SD = 1;10) participated. The monolinguals were living in Hong Kong; the bilingual children were simultaneous bilinguals living in an English-speaking country and were therefore English-dominant (verified by parental report and performance on standardized tests). All children completed a picture-pointing test of comprehension of subject- and object- RCs in Cantonese. The bilinguals' comprehension of English RCs was also tested. For Cantonese RCs, results revealed a group X extraction interaction ($\beta = 4.24$, $p < .001$), showing that the two groups processed subject and object RCs differently. The monolingual group showed a marginally significant object RC preference ($\beta = -.38$, $p = .08$). In contrast, the bilinguals showed a significant subject preference ($\beta = 3.56$, $p < .001$), potentially due to transfer from English, where they also showed a significant subject preference ($\beta = 2.12$, $p = .006$). The interpretation of transfer was supported by an analysis of error patterns, which showed that bilinguals consistently interpreted the subject of Cantonese object RCs as the head noun. We attribute this error to the fact that Cantonese object RCs have SVO word order, which overlaps with canonical word order in both Cantonese and English, as well as English subject RCs. The results extend Yip and Matthew's (2007) observation of transfer reflecting language dominance to group level performance and to comprehension.

Child bilingual language development
Language, general

Exploring Variables that Influence Caregiver Report of Bilingual Children's Language Proficiency: English-Malay Pre-School Children in Singapore

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Lust, Barbara, Cornell University

Abstract

Studies have examined the variables (e.g., amount of input) that influence bilingual children's language development [1]. However, they have often relied on brief caregiver reports, making it difficult to identify the numerous variables that influence child language acquisition. The purposes of the current study were two-fold. First, we explored the variables that influenced caregiver estimates of bilingual children's language proficiency using a new Child Multilingualism Questionnaire (CMQ). We also examined the robustness of the CMQ by assessing how well it predicted bilingual children's vocabulary performance in one of the bilingual languages, English.

Caregivers of 18 Singaporean English-Malay bilinguals from a Malay population (M = 64.7 months, SD = 7.04) participated. They completed the CMQ of over 77 items, including child's language and background information. Child English vocabulary was assessed through the English Peabody Picture Vocabulary Task (PPVT-IV). Eight questions were selected from the CMQ to test their prediction of caregiver report of child's proficiency in comprehension and production in English and Malay: child shyness, age of onset of exposure and of production to language, amount of preschool education, amount of exposure to language, number of caregivers, amount of child's production of language, and caregivers' language proficiency. Regression analyses indicated that for English, age of onset of exposure significantly predicted caregiver estimate of child's comprehension; no variables predicted estimated child's production. For Malay, caregiver's proficiency predicted estimated child's comprehension. Caregiver's proficiency and estimated child's shyness predicted estimated child's production in Malay. On the other hand, age of onset of exposure to English did not significantly predict standardized English PPVT scores although children's amount of exposure to English did.

Caretakers appear to use different factors to evaluate bilingual children's proficiency in different languages. The factors that determine caretaker estimates of child proficiency may differ from those that are involved in direct testing.

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First language acquisition
Morphology

Influence of productivity on the acquisition of inflectional markers

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Christensen, René dePont

Abstract

Studies on acquisition of inflectional morphology often distinguish between 'regular' and 'irregular' inflection. This distinction originates from studies of English, which is characterized by having one default inflectional marker for a grammatical category (e.g. the PL suffix -s) and a minor number of exceptions to this default rule. We find this distinction rather inexpedient since this is not the case for all languages (e.g. Danish, German). In order to address this issue we have developed a scale with three degrees of productivity. Productivity is here defined as the ability of the inflectional marker to occur on new words. For the PL system this means the ability to add the PL marker (stem change + suffix) to a new noun in order to form a new PL noun.
Productivity scale for the Danish PL markers:
Fully Productive: a-schwa (/ɐ/) suffix without phonemic stem change.
Semi-Productive: e–schwa (/ə/) and zero suffix without phonemic stem change.
Unproductive: markers with phonemic stem change and markers with the foreign suffixes s, a and i.
Hypothesis:
We predict the error direction to go from Unproductive to Semi-Productive to Fully Productive PL markers.
Empirical data:
Task 1: semi-naturalistic picture based elicitation task formed as semi-structured interviews.
Participants: 80 monolingual Danish-speaking children between 3-9 years.
Task 2: picture based elicitation task. The test material consists of 48 stimulus items.
Participants: 160 monolingual Danish-speaking children between 3-10 years.
Results and conclusion:
The study shows that PL acquisition is affected by morphophonological category: children produce more correct PL forms of nouns with a Fully Productive PL marker than of nouns with a Semi-Productive or Unproductive PL marker. Children overgeneralize the Fully Productive and Semi-Productive PL markers but never the Unproductive. The error direction goes from Unproductive to Semi-Productive to Fully Productive PL markers.

First language acquisition
Language, general

The KidsWords Project: Factors Associated with the Early Language Development of Children Growing up in New Zealand

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Abstract

Background and purpose. Little information exists on the early language development of children growing up in New Zealand (NZ). Reese and Read (2000) adapted the MacArthur-Bates Communicative Development Inventory: Words & Sentences to NZ English (NZ CDI:WS) and examined its validity and reliability, but normative data currently do not exist. This project has two aims: (1) to develop nationally representative norms for the NZ CDI:WS for children aged 16-30 months; and (2) to examine the association between early vocabulary and grammar and demographic, family and child variables.
Methods. Our target population is parents of monolingual, English-speaking children aged 16-30 months living in NZ. As of September 2013, parents of about 1000 children had participated. We anticipate that by the time of the presentation, the sample size will be nearer the goal of 3000: 100 girls and 100 boys at each month of age. Data are being collected via a dedicated website (www.kidswords.org), where parents complete an online version of the NZ CDI:WS and a standard questionnaire about their family and child.
Results. Children's expressive vocabulary size ranged from a mean of 68 words at age 16 months (95% CI=53, 84; SD=66) to a mean of 452 words at 30 months (95% CI=353, 552; SD=194). Vocabulary size was correlated with age ($r=.64$, $p < .0001$), accounting for 41% of the variance. Girls had significantly larger vocabularies (M=282, SD=198) than boys (M=223, SD=193), and sex accounted for an additional 2% of the variance. Percentiles for vocabulary size and grammatical complexity scores will be presented, as will associations between these language measures and selected demographic, family and child variables. Cross-linguistic comparisons will be made between the NZ data and data from other countries.

First language acquisition
Pragmatics

The functions of dislocation in mother-child interaction in French and German: a confrontation of different linguistic means of referential expression

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Abstract

Dislocation is an important feature of spoken French, especially in child language and child directed speech (cf. De Cat, 2007). In German, dislocation is also a structural possibility, but is much less exploited (cf. Altmann, 1981 for a typology of German dislocation).
Dislocation is commonly associated with topic marking (cf. Lambrecht, 1994 inter alia). In French, this is conveyed by syntax. In German, topic marking is expressed mostly by prosodic and word-order means.
Comparing the acquisition of dislocation in languages like French and German, that do not use this device to the same extend brings up an interesting topic regarding the process of acquisition itself: how do form/function pairs emerge? Recent research shows that young children are sensitive to discourse status, but do children just reproduce statistically important input features? Or have they acquired the underlying pragmatic competence? Comparison with a language like German, that uses radically different linguistic means to convey topicality, would allow for a solid argument in favor of pragmatic competence: if similar discourse functions are expressed at the same ages by different linguistic means in different languages.
In order to better understand the different use in these two languages of existing structural possibilities, quantitative and qualitative analysis were conducted.
5 french-speaking and 5 german-speaking mother-child dyads were audio- and videotaped in natural interaction settings. Nouns, pronouns and dislocations were identified and coded for morpho-syntactic features, information status, referential chain placement, topicality and alternation of subjects from one utterance to another.
First results suggest that prosodic proeminence, word-order variation, topic-drop and lexical over-specification are used in German where French features dislocation.
Discussion will deal with the implication of such results on the understanding of the acquisition process: they seem to suggest an increased importance of pragmatic and interactional features for first language acquisition.

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Literacy and language
Language, general

Executive functions and reading comprehension – the case of Danish children learning deep orthography

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Abstract

Seymour et al. (2003) have argued that linguistic differences in syllabic complexity and orthographic depth are responsible for slow reading development in languages with deep orthographies e.g. Danish and English, and hypothesize that deep orthographies induce the implementation of a dual foundation which demand the engagement of a wider range of cognitive skills. Christopher et al. (2012) investigated reading and executive functions and found that working memory, but not inhibition is a predictor of both word reading and comprehension.
This study sets out to investigate the role of executive functions (working memory and flexibility) on reading comprehension in a language with deep orthography. The sample consisted of 39 Danish school-aged children: 24 children from 3th. grade (8 girls) mean age: 107.73 (4.7) months and 15 children from 4th grade (8 girls) mean age: 120.87 (4.8). The children were tested on sentence comprehension, working memory and cognitive flexibility. Regression analyses were carried out for each grade separately in order to test the effect of working memory and flexibility. For 3th. grade children nonword reading entered at step 1 explained 67.4% of the variance in reading. Listening span (WM) entered at step 2 explained only 68.6 % of the variance of sentence comprehension. Cognitive flexibility (Cartwright 2012) entered in step 2 (instead of WM) showed a similar result.
Regression analyses for 4th. Grade children nonword reading entered at step 1 explained 45 % of the variance in reading, listening span at level 2 explained only 52 %, while when flexibility was entered at step 2 (instead of WM) it explained 66 % of the variance in reading. The results suggest that the ability of flexible coordination of sound and meaning plays an increasingly important role in reading comprehension in a deep orthography languauge during the course of development.
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First language acquisition
Semantics and lexicon

Developmental changes in infant sensitivity to verb morphosyntactic cues in word learning

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Abstract

Previous research has shown that English-learning infants rapidly map novel transitive verbs onto novel actions using morphosyntactic cues in the input sentences by 24 months of age (Waxman et al., 2009). While these findings suggest that their representations of verb morphosyntatic cues are strong enough to guide transitive verb learning, less is known about such representations in younger infants. The present study investigated whether infants younger than 24 months are able to use transitive verb morphosyntactic cues when object and action interpretation are possible.
Using an infant-controlled habituation method, Japanese learners at 14 (N=20) and 20 months (N=20) were habituated to two cartoon-animated events of a familiar agent (a bunny) engaged in a causative action (jumping-on/knocking-down) on an object (red rectangle/blue peanut-shape). Each event was paired with a novel word (moke/seta) embedded in a transitive verb sentence frame with a null subject (e.g., 'omocha o moke-shiteru yo', meaning 'ø is moke-ing [a] toy'). Once habituated, they were given one of the habituation events (baseline) and three switch test trials (word-switch, action-switch, object-switch). We hypothesized that if they can map novel verbs onto actions, they would look longer at the action-switch than the baseline and the object-switch trial.

The 20-month-olds looked significantly longer at the action-switch than the baseline and the object-switch trial (ps<.001), showing a successful performance. In contrast, the 14-month-olds looked significantly longer at the object-switch than the baseline and the action-switch trial (ps<.05), indicating that they incorrectly mapped novel transitive verbs onto objects. These results are consistent with our previous findings that Japanese-learning 14-month-olds incorrectly mapped novel intransitive verbs onto agents whereas 20-month-olds correctly mapped them onto actions, revealing an interesting developmental change between 14 and 20 months. When infants' representation of verb morphosyntactic cues is not strong enough, they map novel words onto objects rather than actions.

Language development in atypical populations
Language, general

Patterns in morpho-syntactic acquisition as precursors or predictors of developmental dyslexia in Dutch at-risk children

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Abstract

In the Dutch Dyslexia Project (DDP), over 300 children and their families were followed from the age of two months until their 10th birthday, in search for early precursors of developmental dyslexia in the pre-school years. Several experiments (brain-imaging and behavioural tests) were administered to follow auditory and visual processing and language and reading development. Within this longitudinal study, language production data were collected on a regular basis between the ages of 17 months and 47 months.
Children at familial risk of developing dyslexia appear to have already delayed and deviant lexical production at 17 months, with fewer verbs and closed class elements than typically developing children. This difference becomes more extreme at later ages. In their onset of combining two words, at-risk children lag behind control children. In a more detailed analysis of their reported longest utterances between 23 and 35 months, at-risk children appear to produce shorter utterances, both at word- and morpheme-level and use less function words and verbal inflections. These findings are reflected in their spontaneous production samples, when their utterances are analysed for grammatical complexity, revealing delays in MLU, and in the use of specific clause types and the number of clause elements. Analysis of their use of inflected verb forms suggests an extended Root Infinitive stage and more subject-verb agreement errors over a longer period in comparison to typically developing children from the control group.
So, before the age of two, differences can be observed between language production profiles of at-risk and control children, and several deviances and delays appear to persist until at least the age of 4 years.
Now that the children have grown older, the profiles in language acquisition are related to reading development, in order to establish predictive values with respect to specific reading problems associated with developmental dyslexia.

Language development in atypical populations
Semantics and lexicon

The effects of context and joint attention skills on autistic children's internal state language

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Abstract

Research on internal state language in autistic children reveals an uneven pattern. While some studies show that high-ability autistic children are impaired across a broad range of internal state term categories, other research shows that autistic children are more selectively impaired in their talk about cognitive states. Finally, some studies even demonstrate no impairments in autistic children's internal state talk compared to clinically normal children. The different findings have largely been explained by context effects. However, to date, studies have neglected the role of children's joint attention abilities in explaining these differences and have yet to compare the same children across different contexts to corroborate this interpretation. Thus, in an overall sample of N = 51 German-speaking children (n = 24 autistic children; 84% males; mean age = 90.57 months), this study tested internal state language from eight different categories (physiology, perception, volition/ability, emotion, moral/obligation, cognition, cognitive particles, modulatory particles) across three different contexts (non-interactive mechanical toy task, structured picture book-task, picture sequencing task) taking into account children's joint attention skills. Overall, autistic children showed no deficits in their spontaneous production of volition and emotion talk and in their self-, other- and object-related references across contexts, while consistent with previous research, high-ability autistic children were found to be selectively impaired in their spontaneous use of cognitive terms in a picture sequencing task ($F(1, 44) = 7.27$, $p = .01$, $\eta 2 = .14$), even when controlling for language age, mental age and overall verbosity. Further, as opposed to typically developing children, autistic children showed severe impairments in their triadic skills. However, individual differences in the production of internal state terms were not linked to triadic skills, but to autistic children's dyadic skills. The findings are discussed in regard to the role of joint attention in language-based intervention strategies.

Language development in atypical populations
Language, general

Reliability of screening tests for Lithuanian: measuring grammar, phonological and narrative awareness

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Abstract

This contribution presents a pilot study of Lithuanian screening tests and their reliability for clinical decisions on Specific Language Impairment (SLI). The experience of most speech therapists in Lithuania shows that the current education system does not adequately serve the needs of children with language impairments. The resources that are available to clinicians are scarce, therefore the need to develop screening tests is obvious.
Sentence repetition test (SRT) and nonword repetition (NWR) tests are increasingly being considered as clinical markers for SLI (Archibald & Joanisse 2009). Moreover, sentence repetition has been reported to correlate well with children's lexical/morphological learning and sentence comprehension/processing (Rispens 2004; Volterra, Capirci, Casell, Vicari 2004). Narrative production tests reveal many aspects of language content, form, and use. This study employs a newly developed language test for clinical and research aims (the framework of COST action ISO804). Sentence, nonword repetition and narrative tests were used for the analysis. The initial results obtained after testing 4, 5 and 6-year-old TD monolingual children (N=75) and the group of SLI (N=12) are presented.
The results have demonstrated that SRT correlates significantly with chronological age, phonological awareness and narrative scores. Repetition accuracy and general productivity were found to decline with age, i.e. younger children produced more errors. The performance of the SLI group was significantly poorer in all three tests, but demonstrated the same trend as the one observed in the TD groups, namely, syntactic complexity, length of the word, and lexical diversity were difficult for all the groups.
Based on the piloting results it can be claimed that Lithuanian SRT, NWR and Narrative tests could be potentially good predictors for language impairment. These tests showed to be reliable as screening measures.
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First language acquisition
Phonetics and phonology

Stimuability in German-speaking Children Aged 2;5-4;0

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Abstract

(i) the problem under investigation
The term 'stimulability' describes a child's ability to produce a speech sound through imitation or cues given by an investigator although the sound doesn't belong to the child's phonological inventory (Miccio & Williams, 2010). Research on English suggests that 'stimulability' indicates whether a child will acquire this sound through maturation or not (Miccio, 2009). Non-stimulable sounds seem not to be acquired without treatment (Miccio, Elbert & Forrest, 1999). Thus 'stimulability' is described as an early at risk sign for phonological disorder in English-speaking children. However, it is unknown whether a certain kind or amount of cues can facilitate 'stimulability'. The aim of the study is to explore whether 'stimulability' is also found in young German-speaking children and whether cues are supportive for speech sound production in isolation.
(ii) the empirical methods used
Sixty typically developing German-speaking children aged 2;5-4;0 years were recruited. Parents completed a questionnaire to ensure children fulfilled the inclusion criteria. All children were first assessed on their phonological abilities using a normed picture naming test for German. Afterwards they were asked to imitate isolated speech sounds given by the investigator. Cues were offered when direct imitation was not possible. Twenty-two German speech sounds and five cues were selected. The cues were randomized for each sound and for each subject individually to control for possible sequence effects.
(iii) the results obtained
Data showed that German-speaking children are able to produce isolated speech sounds through imitation correctly although the sounds are absent from their phonological inventory independent of their age. The majority did so without any help of further cues.
(iv) a conclusion
It can be concluded that simulability is indicative of typical phonological development also in German. Further research will need to investigate, whether it can be used as an early marker of phonological disorder.

Cognition and language development
Semantics and lexicon

Reexamine Universal Noun Bias Hypothesis from Comprehension Perspective

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Abstract

The vocabulary dominance in early child language has been a controversial issue. Gentner (1982) claimed Universal Noun Bias in early child language for the concepts of nouns are easier for children than verbs. However, Tardiff's (1996, 1997) argues for a verb bias for Mandarin speaking children and attributed it to child directed speech. That is, Mandarin allows null-subject and pro-drop, thus nouns do not occur as frequently as verbs. Both of their arguments relied on production data, which is context dependent. This study aims to reexamine the Universal Noun Bias Hypothesis from the comprehension perspective.
The Chinese version of Peabody Picture Vocabulary Test (Lu & Liou, 1998) and a new developed Chinese Vocabulary Test were given to 50 Mandarin-speaking children aged 2-6, ten in each age group. Half were female and half were male. Since the Peabody Picture Vocabulary Test consists of more than 60% of nouns, a new Chinese vocabulary test was developed based on words with high frequency in children's spontaneous speech with 56% verbs, 30% nouns and 14% adjectives in the same test format. The participants were tested individually and the order was counterbalanced.
The average accuracy rate of the new Chinese Vocabulary Test did not differ much between nouns (84.6%) and verbs (83.3%). On the other hand, the participants performed better in nouns (M=73.1%) than verbs (M=66.7%) in PPVT. Younger children show verb bias while older children show noun bias. In the new Chinese Vocabulary Test, children performed better in verbs from 2-4 years old and did better in nouns after four years old. The results of Peabody Picture Vocabulary Test showed verb bias in the two-year-olds, while noun bias in the older groups. It seems that younger children are more subject to input influence while older children are influenced more by cognition in acquiring vocabulary.

Cognition and language development
Language, general

When cause meets motion: the development of cohesion in picture-based narratives

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Abstract

Developmental studies of narrative production revealed an increasing ability to integrate top-down principles of discourse construction and bottom-up linguistic skills across languages in relation to connectivity, temporality, reference, and space (Berman & Slobin, 1994; Hickmann, 2003). The present study investigates the expression of causation and motion in the picture-based narratives produced by 96 native Hebrew speakers divided into four age-groups - 5, 8, 12, and adults.

Going top-down, the study explores the development of four types of causal relations - psychological, motivational, enabling and physical - between the content categories of the stories that frame a goal-plan of action (Trabasso et al., 1989), which is rich in motion events varying in complexity of ground and path. Bottom-up, focus is on how children and adults manage to express intentional action and motion together, monitoring the selection of particular linguistic forms that contribute to infer the causal relations. Preliminary analyses of the data show that content categories and causal relations increase with age to represent a hierarchical goal-plan of action. Driven mostly by perceptual saliency and local cues of discourse organization, younger children express causation and motion at the level of the isolated pictures, with high reliance on local, temporal chaining of the events. Psychological relations between events and internal reactions are more frequent among the youngest, and subsequently replaced by motivational, enabling and physical relations, which require higher levels of linguistic complexity and content elaboration. With age, causal relations are explicitly marked by more complex linguistic means within and across clauses, achieving the integration of cause and motion in compact linguistic constructions that reflect both linguistic sophistication and global strategies of discourse construction.

The results of the study underscore the long developmental route towards mastery of narrative-embedded linguistic abilities, with particular attention to the domains of causality, intentionality and motion.

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Cultural and social factors in child language development
Language, general

Maternal Reminiscing Predicts the Quality of Children's Autobiographical Narratives about Jealousy during Middle Childhood

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Abstract

Maternal-guided reminiscing about emotional events helps children to evaluate the past in ways that cultivate their sense of self and others (Nelson & Fivush, 2004). Most research, however, has focused on either the style or content of maternal speech with preschoolers about past experiences of basic emotions (e.g., happy, sad). The present study extends the literature to include assessment during middle childhood, examining the roles of both style and content, and through evaluating both parties' discourse. We examined eighty 5- to 11-year-olds' (40 girls, 40 boys) and their mothers' discourse about jealousy—a complex emotion concerning social competition and relationship loss. First, children described a previous jealousy episode to the researcher (i.e., individual personal narrative) and completed tests of social cognition (i.e., emotion comprehension, perspective-taking). Finally, mother-child dyads discussed a previous jealousy experience (i.e., co-constructed narrative). The quality of children's individual personal narratives was assessed through their use of emotion explanations. The co-constructed narratives were coded for both children's and mothers' reminiscing style and content.

Our results suggest that the stylistic influences of maternal reminiscing on younger children's abilities function in the same manner during middle childhood. Specifically, we found that maternal elaboration enhances, while maternal repetition impedes, the quality of children's autobiographical narratives—beyond the influences of children's age, gender, socio-cognitive abilities, or their own reminiscing speech. Furthermore, our analyses of maternal content revealed that mothers emphasized self-management when discussing their child's jealousy (i.e., this is what I can do when I feel jealous), rather than self-in-relation-to-others (i.e., this is how I let others know I feel jealous) or self-definition (i.e., I am a jealous person). Results are discussed in relation to socialization practices behind children's expression of jealousy—a negative emotion associated with interpersonal rivalry—that is frequently experienced, but that American culture says should not be expressed.

First language acquisition
Phonetics and phonology

An Acoustic Analysis of Coarticulation Development in Finnish-speaking Children

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Abstract

(i) In adult Finnish speech, several coarticulatory effects are reported to appear in the production of the fricative /s/(S). There is a gap in the data available for young children in the process of acquiring the phonetic features of S especially in combinatorial sequences of S and vowels (V). The present study attempts to document and compare normal (typical) acoustic variation of children's S productions in vowel contexts in three age groups, i.e. below, at and above the assumed /s/ production stabilisation.
(ii) The subjects of the study were 10 children in 3 age groups (6 to 7 years, 8 to 9 years and 11 to 12 years) representing both sexes while 10 adults served as a reference group. In order to determine the acoustic manifestations of vowel-induced coarticulation of S, spectral moments (M1, M2 and M3) were computed at 10 to 20 ms intervals in the spoken S tokens in select combinations of vowel contexts.
(iii) The results show that the effects of vowel context are manifested in the spectral moment features of S, especially in M1 and M2, but to a varying degree and that there are differences in the effects of vowel context between the age groups. The general results also reveal that the coarticulatory effects of vowels on the spectral features of S in the children's productions of this study differ from the adult model.
(iv) The results suggest that there are salient developmental stages in the children's progress toward adult-like phonetic realisations of S and V sequences.
Also, the results for the Finnish S suggest that adult-like phonetic features of sibilants are likely to appear in children's speech somewhat later than generally assumed.

Language development in atypical populations
Morphology

Noun plural production in early implanted preschoolers with cochlear implants:

an experimental study of Dutch and German

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Abstract

One of the main determinants for successful language acquisition in deaf children with cochlear implants is the age at which children receive a CI: implantation in the first two years of life has been shown to yield quite remarkable results. But do these children reach age-appropriate spoken language after some time of implant use? The purpose of this experimental study was to examine the production of noun plurals in early implanted Dutch- and German-speaking preschoolers, as compared to their normally hearing peers. More specifically, we charted out the impact of two characteristics of plural formation: the degree of predictability of the suffix and the degree of stem transparency.

The study involved 14 children with CI (median age 4;7, range 3;10-5;9) and 80 age-matched NH controls. The children with CI were diagnosed a profound hearing impairment (>90dBHL) in the first year of life, received their implant before 24 months, and were raised in hearing, monolingual families. The test procedure was a plural elicitation task in which participants were presented a set of singular nouns for which they had to provide the plural forms; test items were of mid-to-low plural token frequency and were balanced for suffix predictability and stem transparency.

Statistical mixed-effects-modeling showed no significant differences in correct plural responses between CI and NH ($p=.508$). Both groups showed the same patterning, with a higher success score for plurals with a highly predictable suffix without a stem change, and the lowest score for plurals requiring an exceptional suffix with substantial stem change ($p<.001$). However, there were significant differences in repetition of singulars ($p<.001$). These results suggest that after 3 years of implant use, early implanted children show age-appropriate patterns of noun plural formation, but still have to catch up w.r.t. the task consisting in associating a given singular with its plural form.

Language development in atypical populations
Semantics and lexicon

Lexical selection and cognitive control in children with specific language impairment

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Abstract

Specific language impairment (SLI) has recently been associated with impairments in executive functions, and more specifically cognitive control (Henry et al., 2012). To study how these deficits might relate to lexical problems, we manipulated lexical conflict in a picture naming task, and also tested cognitive control performance in 13 children with SLI (age range: 7;1 to 11;4) and 13 age-matched typically developing control children. Cognitive control tasks included verbal and nonverbal versions of the Stroop task for testing representational conflict resolution, and a stop-signal task for examining response conflict resolution. In the picture naming task the level of conflict was manipulated by (1) the context of the picture by presenting pictures form the same versus different categories (homogeneous versus mixed conditions) and (2) the number of available names of the picture (low versus high agreement conditions) (the design was based on Schnur et al., 2006 and Kan & Thompson-Schill, 2004). Reaction times were expected to be higher in homogeneous than in mixed context as well as in cases of low versus high agreement. We also hypothesized that if general abilities of cognitive control are involved in the resolution of lexical conflict, performance on different tasks would correlate. Children with SLI were overall significantly slower in naming pictures but conflict manipulations affected the two groups similarly: both groups showed longer RT-s in high conflict (homogeneous and low agreement) conditions. In the SLI group, this pattern was also evident in the number of errors. In the SLI group (but not in control children) correlations were found between conflict effects in the naming task and measures on representational conflict tasks. These results argue that lexical problems in SLI can arise in cases of lexical conflict where weaker abilities in cognitive control can give rise to errors not observed in typically developing children.

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Quantitative and qualitative input factors
Phonetics and phonology

Input for word learning: isolated words and utterance boundaries in speech directed to 11-month-old infants

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Abstract

In order to acquire language, infants must extract word forms from speech and map them to meanings. Some have argued that experience with isolated words plays an important role in this process (Lew-Williams, Pelucchi, & Saffran, 2011). However, corpus studies suggest that one-word utterances are rare in infant-directed speech (e.g. Van de Weijer, 1998). Other studies have argued that phrasal boundaries play an important role in early word learning (e.g., Shukla, White, & Aslin, 2011). However, there is little work examining how often caregivers align different word types with utterance boundaries when addressing infants.
In the current corpus analysis, we investigated how often different word types occur in isolation and in different utterance positions in infant-directed speech. Furthermore, we asked if caregivers tend to place new to-be-learned words in particularly short (or even one-word) utterances. To achieve these aims, we examined a corpus (about 33 hours total) including 28 pairs of Dutch-speaking caregivers teaching their 11-month-old infants 4 different types of words: a proper name, a noun, a verb, and an adjective.
We found that target words were rarely produced in isolation. This was true for all word types. Caregivers also did not place target words in short utterances: interestingly, they tended to embed the target words in longer-than-average utterances. Furthermore, we found that all four word types occurred most frequently at the beginnings and endings of utterances.
Taken together, our findings suggest that occurrence of words at utterance edges is important in word segmentation and early word learning. Our results show that this is not only the case for nouns and verbs, but also for proper names and adjectives. In short, we have shown that in word-learning situations, caregivers do not produce words in isolation, but they do tend to highlight words by positioning them along utterance edges.
(299 words)

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Cognition and language development
Morphology

Subject-Verb Agreement and Verbal Short Term Memory in Specific Language Impairment

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Abstract

Research on Specific Language Impairment (SLI) revealed deficits in verbal inflection and verbal short term memory (VSTM) and highlighted the impact of VSTM on morphosyntax (Botting & Conti-Ramsden, 2001).
This study investigates the performance of Greek speaking children on VSTM and Subject-Verb Agreement (S-V-Agr). We tested 10 SLI children aged 7-11 years, 24 control children matched to the SLI children on language age (LA), and other 12 control children matched to the SLI children on chronological age (CA). All participants were tested on two non-word repetition tasks (to check VSTM capacity) and three S-V-Agr tasks including
(i) An off-line elicited production task
(ii) An off-line grammaticality judgment (GJ) task in which half of the experimental sentences contained a S-V-Agr violation and
(iii) An on-line self-paced listening task in which half of the test sentences contained a S-V-Agr violation.
We performed non parametric statistics on the results and found significant differences in the VSTM task with the SLI children showing the lowest performance. No significant between-group differences were found for the off-line S-V-Agr production task and reaction times (on-line task). By contrast, significantly lower performance by SLI children was exhibited on the off-line GJ task compared to CA controls. Within group analysis indicated that SLI and CA participants showed longer reaction times for ungrammatical than grammatical sentences in the on-line task.
We argue that Greek school age children with SLI show grammatical sensitivity in S-V-Agr, presumably due to the rich verbal inflection of Greek. We attribute the low SLI performance on the off-line GJ task to the task's metalinguistic demands (McDaniel & Cairns, 1996). We underline that, despite their target performance on two of the S-V-Agr tasks, the SLI participants showed striking difficulties in VSTM. We suggest that S-V-Agr can be acquired by SLI individuals with apparent limitations in VSTM.

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Cognition and language development
Syntax

Language and executive functioning in French monolingual and bilingual children with and without specific language impairment

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Abstract

Children with Specific Language Impairment (SLI) have severe language deficits by definition but recent studies suggest that they also present deficits in non-verbal executive functioning (EF), especially in inhibition and working memory [1]. In bilingualism, on the other hand typically-developing (TD) children exhibit enhanced non-verbal inhibition skills, because of their constant need to inhibit one language while using the other [2]. The present study explored the relationship between bilingualism and SLI on both language and EF abilities by measuring the language and EF performances in four groups of children aged six to eight: 17 TD monolingual and 19 SLI monolingual children speaking French, 19 TD early-successive bilingual and 14 SLI early-successive bilingual children learning French as their second language around three years of age. Language performance was measured in French, using an object clitic elicitation task and a novel word repetition task. EF performance was assessed using three non-verbal tasks, tapping respectively interference inhibition, response inhibition and working memory. Results showed that both SLI and bilingualism negatively affected the production of French object clitics and the repetition of French novel words. With respect to EF, working memory did not discriminate between the groups. For interference inhibition, no clear deficit in SLI was observed, but there was a bilingual advantage on the most demanding trials, supporting Martin-Rhee and Bialystok findings (2008) [2]. Response inhibition showed a negative SLI effect but no effect of bilingualism, suggesting this as a useful measure for discriminating a bilingual child with SLI. No significant correlations were observed between language and EF performances in either monolingual or bilingual children, indicating that EF abilities do not relate in a direct way to language performance, neither in a SLI nor a bilingual context.
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Language development in atypical populations
Language, general

Disturbed processing of noisy sensory information in dyslexia

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Abstract

We present the results of a first experiment that was set up to attest whether poor phonological development in dyslexia may be the result of deficits in the perception of sensory stimuli in noise conditions. This experiment consisted of an auditory speech perception and a visual eye tracking reading version using a similar set of materials. The two versions were conducted by the same groups of dyslectic (12) and normally developed language users (all young adults).

Materials consisted of sets of Dutch sentences in which the final word was a congruent or incongruent word of a minimal pair like muis-huis (mouse-house) as in The cheese was eaten by the mouse/*house. The sentences were presented in three noise levels (no noise, -5 dB, -10 dB fluctuating noise for the auditory version, or no noise, a blocked pattern masking 30%, or 60% of the text for the visual version). Participants were instructed to repeat or read the sentences as precisely as possible. In both versions (in)correct responses of critical words were calculated. In the reading study reading times and the number of fixations were registered..

Based on the poor phonological development of dyslectics, it was hypothesized that dyslectics would make more mistakes in incongruent than in congruent conditions. This pattern would become stronger with noise. Normal language users would show no difference between congruent and incongruent conditions in no, or mild noise conditions.

This is exactly what we found. Additionally, analyses indicated that dyslectics relied more on semantic information than on bottom-up information processing while listening or reading, especially in noise conditions. They had longer reading times and more fixations than non-dyslectics. As differences of effects of noise were found in both the auditory and visual version, this experiment supports the hypothesis of the involvement of a general deficit in processing noisy sensory information on both modalities.

First language acquisition
Phonetics and phonology

A study on lexicosyntactic and intonational cues in turn projection by Dutch and English infants

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Abstract

Infants learn language in context of conversations. Successful coordination and comprehension of conversations relies heavily on the ability to anticipate upcoming speaker changes (turn-transitions). Two linguistic cues that are used to anticipate turn-transitions are lexicosyntactic and intonational information. This study addresses how infants weight these cues. Because infants receive rich intonational input and are very sensitive to intonation from an early age (Fernald&Thomas 1984; Moon&Cooper-Panneton 1993), infants may rely more on intonational than on lexicosyntactic cues. To examine the universality of this prediction, two linguistic populations will be investigated.

We will observe the eye-movements of 24 Dutch- and 24 English-speaking 18-month-old infants, and 24 Dutch- and 24 English-speaking adult controls as they watch videos of dyadic puppet conversation. We will track participants' gaze fixations to the current or next speaker at potential turn-transition points. In each conversation, targets are manipulated for lexicosyntactic completion (incomplete declarative vs complete interrogative) and intonational completion (turn-hold vs interrogative contour), resulting in four target conditions:

		Intonational
Lexicosyntactic	Hold	Transition
Hold	1. I do like a...	2. I do like a?
Transition	3. Do you have sweets...	4. Do you have sweets?

Previous developmental studies have used materials with flattened intonation or low-pass filtered speech to control for linguistic cues. The present study aims to examine turn-projection with natural speech in all conditions.

We expect infants to anticipate a turn-transition whenever the intonational cue indicates a transition (conditions 2 and 4), even when lexicosyntactic information indicates a hold (condition 2), because we hypothesize that infants are more sensitive to intonational than lexicosyntactic cues. Prior work demonstrated that adults project upcoming turn-end boundaries primarily if lexicosyntactic cues indicate a transition (conditions 3 and 4 (Ruiter et al. 2006)). If we instead find that infants behave similarly to adults, this would show an early adult-like weighting of information.

Cognition and language development
Language, general

Relationship between working memory and linguistic skills in children

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Abstract

Few studies have looked at verbal and visual-spatial working memory (WM) and primary language impairment (PLI) simultaneously. Even fewer studies have examined linguistic minority children with PLI within a bilingual community. In the present study, bilingual (French-English; English-French) children (N=55; 59.84 months) and monolingual French-speaking children (N=10; 56.10 months) from a linguistic minority community were grouped according to their linguistic development, having either a typical development (TD) (N=56; 59.09 months) or PLI (N=9; 60.33 months). The TD group and the PLI group were matched by age, socioeconomic status and nonverbal cognition. The goals of this study were to look at the differences between monolingual and bilingual children as well as between TD children and those with PLI with regards to verbal and visual-spatial WM skills and to determine if WM abilities could predict the presence of PLI. The Automated Working Memory Assessment (AWMA) as well as other commonly used verbal WM subtests such as non-word repetition (NWR), sentence repetition (SR) and following directions (FD) were used. Results showed no significant differences between the TD bilingual and TD monolingual groups in terms of their WM skills. As for the TD children and those with PLI, significant differences were found for select verbal WM tasks such as SR. No differences were found for the AWMA tasks. However, a descriptive analysis showed that TD children performed better on each of the AWMA WM tasks than children with PLI. Conversely, French and English NWR, SR and ED were all correlated with the presence of PLI and, as such, could predict the presence of PLI. These findings maintain that children with PLI have subtle difficulties with regards to specific verbal working memory which supports the importance of including these tasks within a larger assessment battery for the identification of monolingual and bilingual children with PLI.

Child bilingual language development
Language, general

Using the CCT to Assess Early Vocabulary Development in Monolingual and Bilingual Infants

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Abstract

The present study examined early lexical development in 22-24-month-old monolingual and bilingual infants. Receptive and expressive vocabulary development was measured in 43 French-English bilinguals and 56 French monolinguals using both parental report (MacArthur Bates Communicative Development Inventory; CDI) and the Computerized Comprehension Task (CCT). When assessing expressive vocabulary development using parental report, the bilingual infants appeared to produce significantly more words in their L1 versus their L2. No difference was observed however when comparing the monolinguals against the bilinguals in either of their respective languages. Furthermore, when a measure of total vocabulary was considered, the bilinguals once again appeared to produce approximately the same number of words as the monolinguals. This was also true even after taking translation equivalents (words that the bilinguals knew in both their L1 and L2) into account, and considering a measure of conceptual vocabulary. Early vocabulary comprehension was also assessed using the CCT. The bilinguals once again knew more words in their L1 versus their L2. While no group differences were observed when comparing the monolinguals against the bilinguals in their L1, the monolinguals appeared to outperform the bilinguals with respect to accuracy when comparing them against the bilinguals' in their L2. Interestingly, when L1 and L2 were combined to form a measure of total vocabulary, the bilinguals outperformed the monolinguals. This was also the case for conceptual vocabulary. This present data highlight the importance of using multiple measures to assess early language development.

First language acquisition
Semantics and lexicon

Visual emotional input properties affect the acquisition of verb meanings in 24-months-old monolingual German learning children

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Abstract

There is evidence that emotional properties of the input like +/-happy intonation or facial expression of a speaker, referring to an object or action [1], influence the learning and memory of words for these referents. These properties we call extrinsic emotional properties. The present study focuses on the disregarded question, whether we will find similar influences on word acquisition when these emotional properties are features of the referents of the words to be acquired, like the +/-happy facial expression of an actor who is acting on an object, which we call intrinsic emotional properties.
In a first experiment we tested 24-month-old monolingual German learning children (n=57), using a variant of the intermodal preferential looking paradigm [2]. In a training session children were presented novel verbs while watching short actions, resembling natural situations of word learning, with either a negative or neutral facial expression of the actor; a positive condition is also planned. Successful learning and memory was assessed by tests immediately after training and seven days later.
Our results revealed a significantly enhancing effect of the negative emotional input on verb learning and memory. In line with studies investigating extrinsic emotional properties we may conclude that emotional information increases children's attention to the presented action the unknown verb is referring to.
Furthermore, we may also conclude that the intrinsic emotional property influences the content of what is learned, that is, children faced with an identical action but different emotional input may construct different verb meanings. Addressing this assumption, we carried out an eye-tracking experiment designed similar to the first one with children of the same age (n=31). First results seem to confirm our hypothesis.
Our findings suggest a close interaction of emotional and linguistic processes in early lexicon acquisition. Further studies investigating their changing interaction over development are planned.
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First language acquisition
Semantics and lexicon

Encoding motion events in Cantonese: a comparison between children and adults

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Abstract

In motion events research, a large number of studies focus on how children of western languages (e.g., English, Spanish, French and German) do it in their languages. Relatively few studies explore the issues in Chinese and other Asian languages (e.g., Chen & Guo 2009, Guo & Chen 2009, Ji, Hendricks & Hickmann 2011). Two major questions in research on motion events have emerged in the literature: (a) How does a child encode a motion event? (Developmental issue); and (b) How much of this is affected by the specific properties of the native language? (Typological effect on acquisition). With regard to lexicalization patterns, there has been a debate whether Chinese belongs to the equipollently–framed language as suggested by Slobin (2004) or the satellite-framed language as proposed by Talmy (2000). Using data collected from the video clips, this paper examines how children (n=40) of ages three and five, and adults (n=20) encode motion events in Cantonese Chinese. With reference to Slobin (1998), we analyzed the types and tokens of path verbs and manner verbs. Significant differences were found between children and adults in expressing motion events. In general, children used mainly 'manner only' whereas adults preferred to use 'manner + path' to encode motion events. The issue of lexicalization typology and language development will be explored and discussed in view of the findings.
Keywords: motion events, Cantonese, acquisition of Chinese, lexicalization

Cognition and language development
Phonetics and phonology

The role of phonological analysis to nonword repetition and vocabulary development in two-year-old Mandarin-speaking children

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Abstract

Nonword repetition (NWR) has been considered a measure of phonological working memory, which is further argued to be a good predictor of vocabulary development. In the present study, we examined the mediation role of phonological analysis in the link between NWR and vocabulary development. Twenty-one two-year-old children were recruited, and tested twice with a six-month interval (mean age: 1st testing = 25.03 months; 2nd testing = 31.11 months). In each testing session, the children were measured with their expressive vocabulary, receptive vocabulary, phonological production, phonological discrimination, and NWR. Children were also assessed with the novel word learning ability at Time 1. With the characteristics of Mandarin phonology, this study achieved a more systematic control of the lexicality of the stimuli in NWR and in the word learning task by constructing two sets of nonwords: the nonce-words (i.e. consisting of two real syllables) and the gap-words (i.e. composed of two unattested syllables). Results showed that children had similar performances in the nonce-word repetition and the gap-word repetition. Regression analyses showed that the improvements in NWR could be accounted for by receptive vocabulary, whereas the growth in receptive vocabulary size could be accounted for by children's learning of gap-words. Findings revealed that the improvements in NWR might be driven by the increase in receptive vocabulary. However, children's equivalent performances in the repetition of nonce-words and gap-words suggested that the involvement of receptive vocabulary knowledge in NWR could not be mediation at the lexical level, but mediation at the level of phonological representation. In addition, children's growth in vocabulary depended on not only their word learning abilities, but also the abilities to process and consolidate unfamiliar phonological representation. In all, the developmental change in phonological representation may be an underlying cause of the NWR improvements and vocabulary development.

Language development in atypical populations
Language, general

Identifying successive bilingual children at risk for SLI

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Abstract

Successive bilingual children are often misdiagnosed with regard to Specific Language Impairment (SLI). Therefore it is necessary to correctly identify those children who are at risk for SLI. For monolinguals a few tests are suitable to distinguish impaired children from typically developing children. Tasks involving verbal short term memory (e.g. sentence repetition) or musical memory have been found to be both sensitive and specific (e.g. Sallat 2008). More recently the role of executive functioning has been discussed (e.g. Henry et al. 2012). For bilingual children nonword repetition as well as sentence imitation seem to be promising measures (Thordardottir & Brandeker 2013). The study investigates which measure(s) of verbal or nonverbal working memory identifies best successive bilingual children at risk for SLI.

120 children aged 4;0-4;6 will be tested until February 2014. They speak Russian as their first and dominant language and have been exposed to German for approximately one year. Children are tested with a number of verbal tasks (word and sentence comprehension, expressive vocabulary, sentence production) as well as with measures of working memory (nonword and sentence repetition, nonverbal tests of musical memory and fluid intelligence). All verbal tasks are performed in Russian and German. All nonverbal tasks are presented either in Russian or in German. The pilot study with 10 typically developing bilinguals revealed high correlations e.g. between sentence repetition in German and attention span (n-back) ($r=.985$, $p=.000$). The findings of the pilot study are re-examined with a larger sample controlled for age, time of exposure and socioeconomic status.

Henry, L., Messer, D., & Nash, G. (2012). Executive functioning in children with specific language impairment. Journal of child psychology and psychiatry 53 (1), 37-45.
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Language development in atypical populations
Language, general

Predictors of Language Outcomes for Mandarin-Speaking Late Talkers: A Longitudinal Study from Two to Five Years of Age

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Abstract

Longitudinal outcomes of late-talking toddlers suggested that slow early language development could lead to slower acquisition and performance in a wide range of language skills into adolescence. It is essential to identify the factors that may foster the recovery from early language delays in late-talking toddlers. This longitudinal study evaluated a variety of language measures of late-talking and typically-developing toddlers from ages 2;6 to 5;0, and examined the early predictors of language outcomes at 5 years of age.

Thirty-four Mandarin-speaking late talkers who exhibit significant delays in expressive language on two standardized tests at 2;6, and 31 age-matched typically-developing children participated. Language abilities were assessed at 30, 36, 48, and 60 months, including receptive and expressive language abilities on standardized tests, phonetic clarity (percent correct of consonants and vowels), and mean length of utterance (MLU).

The results show that, as a group, late talkers performed significantly lower than age-matched peers on all of language skills measured at age 3, 4, and 5 (all ps < .01). About 33% of the late talkers did catch up with peers from age 2;6 to 5 by performing beyond normative expectations on expressive language ability, while others remain significant delayed at age 5.

Correlations of language measures among four ages were moderately high (r =.52 to .79), suggesting considerable consistency in individual language development. The analyses of hierarchical regression indicated that non-verbal IQ and mother's education (R2 =.26), language comprehension (ΔR2 =.177) and MLU (ΔR2 =.09) measured at age 2;6 contributed significantly to language outcomes at age 5 (R2 =.53, p <. 001).

These findings suggest the stability of language in childhood for children with and without late-talking history, and the early language abilities at 2;6 were predictive of language outcomes later at 5 years of age.

First language acquisition
Language, general

Tonal word learning reflects tone perception in non-tone-learning infants

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Abstract

Infants are born with an initial sensitivity to speech prosody. They undergo a perceptual reorganization (PR) of tones around 6-9 months, after which non-tone-learning (NTL) infants' sensitivity for tonal contrasts sharply decreases (Mattock & Burnham, 2006). Nevertheless, NTL adult listeners are sensitive to lexical tones and perceive them psycho-acoustically (Hallé, Chang, & Best, 2004). In a previous study, we found that NTL infants lose their tonal sensitivity at 8-9 months, yet this sensitivity is recovered at 17-18 months. We argue that the tone perception of 17-18-month-old NTL infants is psycho-acoustically rather than linguistically based, resembling NTL adult listeners. This argument is examined in the current study.

40 Dutch infants of two age groups (14-15 months, 17-18 months) were tested via an adjusted associative word learning paradigm (associate novel sounds to novel objects) on their ability to use pitch information linguistically. The acoustic stimuli were T1 and T4 in Mandarin Chinese carried by /ta/. Results showed that 14-15-month-old NTL infants were able to use pitch linguistically ($p = .026$) whereas such ability was lost at 17-18 months ($p = .219$).

The current finding was consistent with a previous report on NTL infants' word learning of tones (Hay, Wang & Saffran, 2012), and propone the age of linguistic ability loss of tones to 17-18 months. This serves as positive evidence for our claim that tones are perceived psycho-acoustically by the second half of the second year. Moreover, it implies that infants' phonological acquisition pace influences phonetic perception and word learning. Finally, we argue that a successful word learning involving a non-native contrast may depend on 1) the residual ability to create proto-categories from the input, and 2) the interference level from close native phonemic categories.

First language acquisition
Language, general

Noun and Verb Acquisition in Children: The Role of Frequency and Positional Salience in Maternal Language in the Special Case of Italian

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Abstract

Analysis of the properties of language addressed to children is critical to understanding mechanisms underlying the acquisition of lexical categories. Because of its structural characteristics, specifically the prevalence of verb types in infant-directed speech and frequent pronoun-drops, Italian offers an attractive opportunity to investigate the predictive effects of input frequency versus positional salience on children's production of nouns and verbs. Italian makes contrasting predictions: Mother speech contains more verbs than nouns, but they compete for favorable positional salience. Therefore, the frequency of language input should favor verb learning, whereas positional salience should promote noun acquisition. The main aim of the present study was to examine the influence of these two specific aspects of maternal speech (frequency and positional salience of nouns and verbs) on the growth of early vocabulary in Italian children. To this end, the spontaneous language of 26 mother-child dyads was assessed longitudinally at 1;4 and at 1;8, a time that is generally acknowledged to be developmentally crucial for understanding individual differences in language acquisition. Maternal language was coded for the total frequency of noun and verb types and the percentages of utterances containing noun and verb types in initial, medial, and final positions. Children's productive speech was coded for the frequency of noun and verb types and for the growth rates of each lexical category between the two ages. The percentages of nouns occurring in the final position of maternal utterances at 1;4 predicted children's production of noun types at 1;8. For verbs, children's growth rates were positively predicted by the percentages of input verbs occurring in utterance-initial position, but negatively predicted by the percentages of verbs located in utterance-final positions at 1;4. These findings clearly illustrate how the effects of positional salience vary for different lexical categories.

Language development in atypical populations
Semantics and lexicon

Thirty-three-month-old late talking toddlers' performances in the word learning processes: An eye-tracking study

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Abstract

Background: The late-talking (LT) toddlers perform delayed vocabulary development skills compared to their peers(1). The slower word learning processes might associate with poor vocabulary performance in LT toddlers. The goal of this study was to use the eye-tracker to investigate the on-line word learning processes in LT children.

Method: The participants were 33-month-old LT children (n = 22), and typically-development children (TD, n = 22) (matched with gender, chronological age and birth order). The inclusion criteria for LT were: (1) smaller expressive vocabulary size at age 2 (percentile rank ≤ 15 in the Mandarin Communication Development Inventory-Toddler) and (2) normal cognitive and fine-motor abilities (evaluated with the Bayley-III). Word learning processes were tested with a reference-selection fast-mapping task (six trials) and an eye tracker (Tobii T60) recorded visual fixations. Two of the six trials were familiar-word trials, pictures of four familiar animals were displayed on the 17" monitor. On the remaining four novel-word trials, one novel animal and three familiar animals were displayed. Children were asked to match the target word with a picture when: (1) the word was novel (assessing the fast-mapping process), and (2) five seconds after the fast mapping process (assessing the word encoding process). The short-term retention of novel words was assessed five minutes after children finished the word learning task.

Result: The results of AOI (area of interest) analysis showed that both groups performed similar in the time to first fixation in familiar-word trials. In the other, LT group performed similar to TD group in novel word fast-mapping but LT group was slower in encoding new words ($p < .001$) and performed poorer in the retention of new words ($p < .001$).

Conclusion: The results suggest that the slower encoding process of new words associates with vocabulary development delay in LT toddlers.

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Language development in atypical populations
Language, general

Classification Accuracy of an Oral Language Screener for Spanish-English Bilingual Children

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Abstract

Problem: Language screening is an important component of speech-language pathologists (SLPs) scope of practice. Yet, bilingual children may be over- or underidentified as being at risk for language impairment due to the lack of available instruments with good classification accuracy for this population. This lack can result in an inefficient use of time and resources. The current study evaluated the classification accuracy of a bilingual oral language screener (BESOS) in identifying bilingual Spanish-English children with and without primary language impairment (PLI).
Method: Data for 166 Latino American preschoolers ages 4;5 to 6;5 were obtained from a larger study on the diagnostic markers of bilingual language impairment. Fifty percent of the sample was female. Participants represented a wide range of exposure/use of English and Spanish across the bilingual continuum. Twenty-one children were identified as having PLI and the others (n = 145) had typically developing language skills (NLI). Participants were administered the BESOS, which consists of semantics and morphosyntax subtests in Spanish and English. A series of discriminant analyses were used to determine the combination of scores on the BESOS that best classified children with and without PLI. In the initial comparison, children with PLI were matched to control children based on age, sex, and experience in English. The same cutscores were applied to the non-matched group for the purpose of cross-validation.
Results: The linear combination of the best semantics and best morphosyntax scores for the matched pairs resulted in sensitivity of 90% and specificity of 71% with an overall classification accuracy of 81%. Cross-validation showed similar results, indicating applicability of the obstained cutscores to a broader sample of bilingual children.
Conclusion: The BESOS appears to be an efficient tool in accurately screening bilingual preschoolers for language impairment.

First language acquisition
Phonetics and phonology

From variability to stability: The acquisition of phonemes in French speaking children aged 30 to 53 months

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Abstract

When children first begin to produce the phonemes of their language, their productions are characterized by a high degree of variability (e.g., Ferguson & Farwell, 1975). As children's phonological representations become more defined, their productions become more stable. In fact, the observation of variability beyond the early-word stage has been used as a diagnostic criteria for sub-types of phonological disorders (Dodd et al. 2005). Despite the clinical significance of phonological variability, there exists no normative data that can be used to objectively define the range of "normal" variability in French phonological acquisition. The goal of the present study was to describe variability and stability among French-speaking children between the ages of 30 and 53 months. A total of 153 children participated in the present study and were equally distributed in four groups (aged 30-35, 36-41, 42-47, and 48-53 months). We created a picture identification task with 65 target words, which contained the consonants of French in word initial, medial and final position. The children were asked to produce this series of words three times. Two measures of variability were used. (1) A consonant level analysis that investigated the stability of consonants regardless of word or syllable position. (2) A word level analysis that investigated the consistency of productions across the three series (Holm et al., 2007). The preliminary analysis revealed that the youngest group of children aged 30 to 35 months were significantly more variable than the oldest group aged 48-53 months. This shift from variability to stability will be discussed in terms of the development phonological representations. In addition, the clinical significance of variability will be discussed in light of these findings.

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Cultural and social factors in child language development
Pragmatics

Sophisticated vocabulary in maternal input to children with specific language impairment during shared book reading

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Abstract

Maternal support for meaning associated with the use of sophisticated (i.e., low-frequency) words in interactive contexts has been shown to be particularly relevant for the subsequent lexical development in typically developing (TD) children (Weizman & Snow, 2001). This study examined (a) whether and how mothers of children with Specific Language Impairment (SLI) support their children when they meet a sophisticated word during shared book reading, and (b) whether children with SLI benefit as their TD peers from maternal support. Spontaneous mother-child verbal interactions during two sessions of shared book reading in a group of 15 preschool children with expressive SLI (SLI-group) and two groups of TD children, a chronological age (CA)-matched group and a linguistic age (LA)-matched group, were videotaped. The mother's utterances including or related to a sophisticated word were coded on the basis of informativeness and scaffolding provided; the child's utterances were coded as Initiative, Simple or Extended Answer, Disruption. In addition, the child's lexical development was assessed three months later. Analysis indicated that mothers in the SLI-group produced a higher frequency of directly informative utterances with physical scaffolding compared to mothers in the CA-matched group (U=7; p=.011). Results from sequential analysis revealed that when maternal directly informative utterances were accompanied by physical scaffolding, only in the SLI-group they had a significant probability of eliciting extended answers from children. Partial correlation indicated an association between children's lexical development and maternal direct informativeness in both SLI-group (Rho=.596) and CA-matched group (Rho=.568), and between children's lexical development and maternal physical scaffolding only in the SLI-group (Rho=.539). On the whole, these findings indicate that mothers of children with SLI are able to adapt their communication to their children's linguistic limitations, and that children with SLI benefit particularly from maternal physical scaffolding combined with direct informativeness, suggesting a sensitivity to maternal gestures.

Sign language acquisition and gestures
Semantics and lexicon

Comparing Deaf and Hearing Children's Lexical Semantic Organization in American Sign Language and English

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Abstract

This study compared lexical-semantic organization skills by 17 deaf native signers aged 6-11 years to an age-matched control of 49 hearing monolinguals. Drawing from a spreading activation model of semantic processing (Collins & Loftus, 1975), we used a repeated meaning association paradigm, adapted from Sheng and McGregor (2010) for ASL, to examine deaf children's semantic knowledge and evaluate the extent to which the type of semantic associations ('syntagmatic', 'paradigmatic') activated by deaf children is comparable to hearing children's associations in English. Responses that were paradigmatic (night-day) received a score of '1 whereas syntagmatic responses (ice-delicious) were scored as '0.5'. In addition, a semantic depth score was calculated for each participant at each elicitation trial, based on Entwisle (1966). We carried out three repeated measures analysis of variance (ANOVA) with Group (deaf=DD, hearing=HG) as the between-participants factors and Elicitation Trial (Response 1, 2, 3) as the within-participant repeated measures. Semantic depth score was the dependent variable. The second ANOVA was carried out with the proportion of syntagmatic responses (averaged over participants) as the dependent variable, the third with the proportion of paradigmatic responses. Findings revealed similar patterns of responses by deaf and hearing participants but also subtle group differences. For both groups, generating semantic responses, as measured by their semantic depth score, became increasingly demanding across trials, in particular for hearing participants. Regarding the type of semantic associations, we saw an increase in participants' production of syntagmatic responses during the first two trials, followed by a decrease between the second and third trial. At the same time, the number of paradigmatic responses decreased across trials, showing particularly for hearing participants. Findings provide evidence suggesting that lexical–semantic organization may be shaped by general cognitive factors that transcend the boundaries of modality.

Cognition and language development
Semantics and lexicon

Body parts and Early-learned Verbs in 4-year-old Telugu speakers

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Abstract

This study reports evidence that early verbs are strongly related to body parts in four-year-old Telugu speakers (South India). The results fit with growing behavioral1, associative2 and neuro-imaging3 results and add a developmental crosslinguistic perspective on the role of the body – and sensory-motor interactions in the world – in verb meanings.
The 121 early verbs examined came from 18 transcripts of 18- to 36-month-old Telugu speakers and encompassed all the 103 action words included in the MCDI norms for young English speakers. Subsequently, in a judgment task, 42 four-year-olds from a Hyderabad elementary school, were asked orally and individually: "What body part do you use when you _____" . In total, the children provided 21 distinct body part terms. From these judgments, we created a body-part vector for each verb. For example, the "meaning" vector for మాట్లాడు (=speak) is: 39 mouth, 2 teeth, 1 lips.

A correspondence analysis (~ a dimension reduction technique) on the matrix of 124 verbs by 21 body parts revealed a highly systematic and structured pattern. The first five dimensions accounted for 94.8% of the judgments and correspond to Dimension 1: hand-region-verbs (68 verbs); Dimension 2: mouth-region-verbs (27); Dimension 3: leg-region-verbs (14); Dimension 4: eye-verbs (3); Dimension 5: ear-verbs (2). These dimensions match the ones found for similar verbs in adults English speakers and in four-year-old English speakers but they account for proportionally more of the judgments (roughly 10% more).

Cultural differences are also reported, such as the reduced numbers of body parts provided or cultural convention in specific body regions connected with verbs (e.g., fingers but no arms).
The presentation will build the case of how this relation between verbs and body parts could be important and relevant in early translation processes and serve as a common basis for semantic structure of early-learned action words.

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Language development in atypical populations
Phonetics and phonology

Accelerated Phonological Development in Williams Syndrome: A two case corpus-based study of late phonological processes

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Abstract

Williams syndrome (WS) is a rare neurodevelopmental syndrome, whose peak-valley profile is characterized by displaying language skills higher than expected compared to its intellectual disability. Previous studies have reported that subjects with WS have a wide vocabulary range, use uncommon words and also master complex grammatical structures almost error free. As most studies have focused on adolescents, studies on phonological development have been scarce. Although Williams syndrome is often presented as a case of preservation of language, speech development follows an atypical course, showing atypical phonological processing (Majerus, 2004).

In this poster we present the results of a short-term longitudinal study comparing the phonological development of two five-year–old WS children (a girl and a boy) with that of two previously analyzed groups of 40 typically developing children of the same mean ages. The WS children were recorded three times within six months intervals, engaging in spontaneous conversation with a researcher. Each conversation was transcribed in CHAT format and analyzed using the programs provided by the CHILDES Project (MacWhinney, 2000). Phonological development was assessed through a qualitative analysis of the types of errors, and a quantitative phonological error index, and compared with normative error rates and type of processes found in the spontaneous speech of the typically developing children.

Our results show that WS children have a delayed onset of phonological development, but with an atypically accelerated trajectory from five years of age onwards, reaching the quantitative levels of error of typically developing peers. However, at a qualitative level, some of the persistent processes are atypical. These results are consistent with those for other areas of language and cognition in WS, in the sense that for subjects with neurodevelopmental genetic syndromes, specific developmental trajectories can be observed within the framework of atypical epigenesis (Karmiloff-Smith, 2007).

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Cultural and social factors in child language development
Language, general

Exploring Infant Engagement and Vocabulary Development in Non-Industrial Communities – Who's Doing What?

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Abstract

In an analysis of infant engagement in Mozambique, we found that Coordinated Joint Attention had significant positive relations with vocabulary development in an urban community, but surprising negative relations in a rural community. In contrast, infants' engagement with only Persons showed significant positive relations with vocabulary in both sites. A deeper analysis of these infants' social networks was necessary to gain further understanding of these findings.

We collected naturalistic observation data from 14 families in each site, when infants averaged 1;1, 1;5 and 2;1 years old. Vocabulary was measured through parental checklists. Videos were coded using an extension of Bakeman and Adamson's (1984) engagement categorization. All social interactions were coded for different individual partners as well as groups. We correlated proportions of time infants engaged with specific partners, in each joint engagement level, with infants' vocabulary.

Results show that urban infants continuously have larger vocabularies than rural infants and that the urban social network is relatively stable over time. Rural infants' social networks reveal a shift from mother caregiving to sibling caregiving between 1;1 and 1;5. Correlations show that time spent in dyadic Persons interactions and joint attention relates to rural infants' word learning only in infant-mother engagements. In multiparty interactions, whether or not the mother is participating, Persons interactions seem beneficial, but joint attention appears detrimental.

We conclude that rural Mozambican infants' social networks are more variable than that of their urban counterparts. Such variation could imply a stronger need for developing social relations, which would be achieved through Persons interactions. This is especially advantageous for learning socio-cultural roles and responsibilities, which are characteristic of both communities (Greenfield, 2009). Furthermore, we can understand why joint attention interactions relate negatively with rural infants' vocabulary if these regularly occur within multiparty interactions that are more complex to coordinate and learn from.

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Child bilingual language development
Language, general

Cognitive Markers of PLI in French-Speaking 5-year-old Children

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Abstract

Communication impairments are one of the most prominent problems affecting Canadian children. In fact, bilingual children are often misdiagnosed as having a primary language impairment (PLI). However, there is little research that has focused on the identification of French children with PLI. Even fewer studies have looked at these children within a linguistic minority setting. This study aimed to determine which tests could better identify monolingual French (n = 3), French-English bilingual (F-EB) (n = 8) and English-French bilingual (E-FB) (n = 9) 5-year-old children with PLI living in a bilingual community in Northern Ontario, Canada. Monolinguals were assessed in French (minority language) and bilingual children were assessed in French and English (majority language). The French tools were the same as those used in a study by Thordardottir et al. (2010) with the addition of equivalent English tests. Vocabulary, syntax, narrative discourse, understanding concepts and executing directions (CED), spontaneous language and verbal working memory (VWM) tasks were included. Results showed that the monolingual children with PLI had difficulties in all areas. However, the best PLI markers for the French monolingual children and F-EB children were recalling sentences (RS), non-word repetition (NWR), and CED. These results concur with previous studies. The scores obtained by the E-FB children indicated that CED and RS were the best PLI markers. In summary, the French-language tests used with monolingual children and F-EB children allowed us to confirm the presence of PLI. Moreover, bilingual children with PLI experienced difficulties either in all the linguistic components of a language, or in one or a few components only. Finally, we noted that the difficulties were not the same from one language to the other. This study further supports the importance of using VWM tasks to better identify children with PLI in both languages.

Cognition and language development
Semantics and lexicon

Cognitive Continuity at the Transition to Sentences

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Abstract

Single word spatial meanings encode the same space/time aspects across the world's languages, while cutting the spatial pie in differing ways (e.g., Bowerman, 1996).
We hypothesize that continuity across languages expresses underlying operative sensorimotor intelligence raised to the level of mental representation (Piaget, J., 1954), while cross-linguistic variation reflects varying influences of ambient languages. The cognitive base is not a collection of concepts, but an overall ability to solve spatial problems in action and interpret perceptual displays, such as those tested in infant research. This underlying system interacts with the ambient language to allow conceptual development in accord with language input. Analysis of the theoretical overlap between motion event semantics and sensorimotor cognition allows assessment of semantic continuity from single words to first sentences with verbs. We propose categories of single Event word use including elements of Talmy's (2000) motion event semantics and investigate the continuity of these meanings in children's first verbs. Early cross-language variation in form is well-attested. This report assesses the cognitive continuity hypotheses in a single language.
Monthly data from five English-learning children (17 to 24 months) were collected in video sessions with mothers and transcribed in CLAN. Event words were identified as exhibiting deictic, vertical path, figure/ground, and/or macro-event semantic properties of Talmy's system. Primal verbs were identified as including one or more of these elements, and omitting additional features such as manner.
Event words preceded grammatical expressions with verbs by 3 to 6 months. Most Primal verbs were used by the majority of participants 57% ; most Other verbs (80%) by single participants. Primal verbs accounted for (60-80%) of combinations with verbs through 24 months.
This demonstration of semantic continuity in English demands future test in additional languages to assess the claim that spatial meanings emerge in interaction between cognition and the ambient language.

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Cultural and social factors in child language development
Semantics and lexicon

What's an Animal? A Window onto Lexical Semantic Development in Three Cultures

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Abstract

Problem. Although we know that variation in life experiences affects the number of word categories children learn (Hoff, 2006), we know less about how this variation affects the semantic content and organization of word categories.
Method. U.S., Australian, and Taiwanese participants named animals and foods for one minute each. Study one comprised 363 American-English speakers ages 3-, 5-, 7-, or 21 years; study two comprised 185 Australian-English speakers ages 5-, 7-, or 9- years; and study three comprised 673 Mandarin speakers ages 3-, 5-, or 7-years. We classified cluster types as taxonomic (e.g., felines) or situational (e.g., African) and determined the set of 10 most frequent names per age and the degree that these sets overlapped across ages and cultures.
Results. For all ages and cultures, both animals and foods were clustered by taxonomy and situation. Embedded clusters became more narrow (e.g., berry vs. fruit) with age. There was remarkable consistency across ages and cultures in the 10 most frequently named animals (≈80% overlap in all cases) with African animals named by more participants than household pets. For foods, consistency across age was also high but consistency across cultures dropped significantly (≈50% overlap).
Conclusion. Young children, like adults, categorize in multiple ways but particular categories become more fine-grained over development. Foods are more culturally defined than animals. Foods have obvious significance for cultural rituals and they are experienced directly in the daily life of any cultural group. Animals are less culturally defined: the most frequently mentioned animals were NOT specific to the three cultures under study. Animal names are likely learned through observation and communication rather than direct experience (Ross & Murphy, 1999) and children's books serve as important input (Freebody & Baker, 1985). Mealtimes and books share features known to promote word learning: redundancy, slot-filler opportunities, and multiple exemplars.
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Child bilingual language development
Pragmatics

Discourse Markers in the Narratives of Bilingual Children

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Abstract

The study reports on cross-linguistic differences in the use of three types of discourse markers in the framework of narrative production: Discourse Connectors (DCs), Fluency Markers (FMs) and Pragmatic Markers (PMs) and the linguistic manifestations of them. Recent research on bilingual children`s discourse abilities has focused on comparing text-structuring devices in L1 and L2 (e.g., Severing and Verhoeven 2001, Stavans 2001). The current study looks at children`s narrative abilities in L1 and L2 from three different perspectives. First, it examines children`s knowledge of the temporal sequencing of events and their hierarchical elaboration through the use of DCs. Second, it compares children`s ability to manage the communication flow by means of FMs. And third, PMs are studied to clarify children`s intentions regarding sensitivity to the listener`s interpretation process. Forty-two children ages 5;0-6;8 (mean age 5;9) from Russian speaking homes and Hebrew-speaking preschools participated. Six narratives were elicited from each child (three in each language) using picture book stimuli (two familiar narratives and one unfamiliar narrative). Findings showed that children initially acquire text-structuring DCs, while FMs and PMs appear later. 100% of children showed evidence of DCs in both L1/Russian and L2/Hebrew with 'and' as most frequent. FMs were used in L1 by 100% of children, but by only 60% in L2, with 'eh' emerging as most frequent in both languages. The same cross-linguistic pattern emerged for PMs (78.6% of children used in L1 and 59.5% in L2) with 'already/still' and 'too' showing the highest frequencies.
The most salient cross-linguistic differences emerged from an analysis of the density of DMs, defined as a percentage of word tokens. Densities of DCs and PMs were observed to be significantly higher in L1/Russian in comparison with L2/Hebrew. L1-L2 differences are discussed in light of production difficulties, attrition and/or pragmatic shift in language dominance.
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Literacy and language
Language, general

Exploring Developmental Trends in Pre-Adolescents' Definitional Skills

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Abstract

Academic definitions, which express a word's meaning through precise lexical choices and compact syntactic structures, are pedagogical instruments used frequently to support students' knowledge construction (Snow, 1990). Though definitions are regularly used at school, teachers rarely consider the linguistic demands of this genre. Academic definitions typically consist of a precise superordinate that designates the word's genus (e.g., a bicycle is a vehicle), followed by a concise syntactic structure that expresses how the word's meaning differs from others in the same genus (e.g., ... a vehicle that has two wheels propelled by pedals) (Scott & Nagy, 1991). In this study, we examined developmental trends in the linguistic skills called upon to construct written definitions as an academic genre. Written definitions were collected at the beginning and end of the school year from 228 4th-grade and 210 6th-grade students attending public K-8 schools in the Northeastern United States. Students were asked to write definitions for three high-frequency nouns with different concreteness ratings (MRC Psycholinguistic Database). Definitions were coded for degree of superordinate precision and syntactic complexity. Using repeated-measures ANOVA with grade as between-subject factor, results revealed significant differences by time (pre-test vs. post-test) and grade. Post-test scores were significantly higher for superordinate precision ($F(1, 435)=40.54$, $p<.0001$) and syntactic complexity ($F(1, 435)=4.58$, $p<.05$) in both grades. Additionally, 6th-grade students displayed higher scores than 4th graders in superordinate precision ($F(1, 435)=90.84$, $p<.0001$) and syntactic complexity ($F(1, 435)=85.95$, $p<.0001$). However, results varied by word. For the most abstract word (anger), positive developmental trends were found for both superordinate precision and syntactic complexity; yet, no significant differences were found for the most concrete noun (bicycle). Findings suggest that definitional skills continue to develop during pre-adolescence and are influenced by word characteristics, such as degree of abstractness.

First language acquisition
Language, general

Preposition omission and case marking in early locative utterances in Russian

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Abstract

Children often omit prepositions when they start producing their first multiword utterances, e.g. Go house. Sit lap. Put table. Towel bed. (Kendall 1;10, from Bowerman 1973).
Theoretical perspectives:
1) Competence-based approach: children's grammar at the telegraphic speech stage lacks any functional categories, i.e. when no transitive preposition is present, the object is a caseless NP which has no case-feature to be valued. (Radford & Ramos 2001).
2) Performance-based approach: children's omissions are due to limitations in processing of grammatical information (Nicholas 2011), i.e. the preposition remains unpronounced due to performance limitations, but is able to assign case.
Russian locative prepositions differ with respect to the case they assign, e.g.
v / na meshk-e -- in/on bag-PREP.CASE
pod / za meshk-om -- under/behind bag-INSTR.CASE
Predictions by different approaches:
1) Competence-based approach: caseless form / default case (nominative) in all utterances.
2) Performance-based approach: correct case marking in all utterances.
The experiment:
Elicited production task. Children were presented with pictures (n=26), where an animal was situated in/on/under/behind a stationary ground object, and asked to say, where that animal was.
Participants:
80 typically developing monolingual Russian children ranged in age from 2;0 to 5;0.
The results:
The rate of preposition omission: 32% in the group 2;3 – 3;0 y.o.; 6% in 3;1-3;11y.o.; 1% in 4;0-5;0 y.o.
The investigation of case usage shows a strong tendency to use prepositional case in constructions with preposition omission in all four configurations.
Conclusions:
1) Neither Radford's competence-based approach nor Nicholas' performance-based approach predicts the pattern attested in child Russian.
2) There is a strong tendency to use prepositional case in all locative utterances involving preposition omission.
3) I suggest that in utterances with preposition omission, prepositional case lexicalizes the Place head in the sequence Place-K-DP, whereas in adult language the Place head is spelled out by locative prepositions.
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Language development in atypical populations
Pragmatics

Autistic children's understanding of affective prosody

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Abstract

Children with autism spectrum disorders (ASD) reportedly have difficulty in estimating speaker's mind by using multiple cues available in communication, but researchers have not reached consensus on how much they are sensitive to affective prosody, since their performance varied across the type of task and context. This study examined their sensitivity to prosodic affect under different contexts.

Participants were six- to nine-year-old children with/without diagnosis of ASD. Children were presented with a pair of pictures, followed by a stimuli utterance whose lexical content and prosody varied in terms of the speaker's affect: positive, negative, or neutral. Children were expected to identify (1)the speaker' face (happy or disgust) or (2)the speaker's referent (a broken or intact object). Children's eye movement and their subsequent pointing response were analyzed.

Our eye-tracking data showed that both groups of children had strong reliance on the lexical content, regardless of the type of prosody. However, when the lexical affect was neutral, our control group reliably used prosodic cues, while no such awareness was confirmed in the autistic group, Our autistic group nevertheless pointed the image corresponding to the prosodic affect in the face task (but not in the referent task). Our follow-up study further revealed that they even showed immediate gaze fixation to the target image under the condition where lexical content was always neutral throughout the test.

It is suggested from the findings above that, in a short while after hearing the speech, autistic children do extract emotional information from prosody. However, it becomes difficult to process it from multiple cues simultaneously and they are thus more likely to take the lexical content over prosody. Their better-performed subsequent pointing choice indicates that their understanding of prosodic affect is complemented by rather slow, off-line process. Our studies revealed their different sensitivity to prosodic affect across situations.

First language acquisition
Phonetics and phonology

Prosodic hierarchy and markedness: what role does the syllable play in child Japanese?

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Abstract

The concept of markedness plays a prominent role in accounting for child data. There is ample evidence in the literature suggesting that children produce unmarked structures (e.g. Pater 1997).

If we turn our attention to the prosodic units, the unmarked binary foot is claimed to play an eminent role cross-linguistically, and Japanese is no exception. However, in the case of Japanese, the main focus of attention is generally the mora, and although the foot containing two morae seems to play a role in Japanese acquisition, the relationship between the foot and the syllable units is not clear-cut.

In order to better understand the relationship between the foot and the syllable, reversal tasks were conducted on elementary schoolers. 27 first graders participated in the experiment. We used nonsense words and prepared minimal words that contained the moraic phonemes in different word positions. One of the major results obtained from our experiment is that more errors were observed in the case where the foot and the syllable boundary mismatched (e.g. koi.ta vs ta.koi). If the prosodic make-up of these two words consisted of only feet and morae, and if, assuming that feet are constructed from left to right, then theoretically, there should not be any asymmetry in the result of the reversal tasks for these two nonsense words. However, whereas nearly 60% (16/27) of the students came up with the correct answer for /ko.i.ta/, only 25% (7/27) answered correctly for /ta.ko.i/. A similar tendency could be read off from all the minimal words differing only in the position of the moraic phonemes. This difference can only be accounted for by recognizing the syllable unit in-between the foot and the mora. Since the Light-Heavy combination is more marked compared to the Heavy-Light, the tasks may become more challenging due to its marked structure.

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Child bilingual language development
Semantics and lexicon

The Effect of Language Context on Monolingual and Bilingual Word Recognition

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Abstract

Parents frequently name objects in sentences that add little substantive information ("This is a ball!"). Fernald & Hurtado (2006) reported that sentence context nonetheless facilitates word recognition. We explore 1) whether children rely on the meaning of sentential-frames vs. prosodic cues that "highlight" where a word will occur, 2) whether bilingual children show the same word-recognition abilities as monolinguals, and 3) how the specific language affects bilingual children (who receive even more "complex" input - they hear words less often, since frequency is split between the two languages and are often exposed to language-mixing). In this Preferential Looking study 19-month-old Spanish-English bilinguals and English monolinguals saw pictures of familiar objects and simultaneously heard speech stimuli in three possible conditions: (i) single word (ball!), (ii) same-language sentence (where's the ball?), or (ii) mixed-language sentence (dónde está la ball?). Monolingual data (n=24) revealed a significant effect of sentential-context $F(2, 46) = 4.02$, $p < .05$, with higher accuracy in same-language-sentence than isolated-word ($t(23)=2.07$, $p=.05$) or mixed-language-sentences ($t(23)=2.31$, $p<.05$), although performance in all three conditions was above chance. In the case of bilinguals (n=23), looking across conditions appears to be reliably above chance ($t(22)=2.82$, $p<.01$), suggesting that in general they do show accurate word recognition. However, based on examination of bilingual children's performance for each of the three conditions individually, looking proportions are only above chance for the same-language condition ($t(22)=2.51$, $p<.05$). Additionally, there is no significant effect of sentential context for this group $F(2, 44) = .85$, $p= .44$. Taken together, these findings suggest that both monolingual and bilingual infants benefit from words in meaningful sentence-frames during word recognition. Bilingual sentence processing is also influenced by language continuity within the sentence-frame; therefore, sentences that include language-mixing lead to poorer word-identification.

Language development in atypical populations
Pragmatics

A Quantitative Analysis of Pragmatic Language in Adults with High-Functioning Autism

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Abstract

Autism is a developmental disorder that often leads to impaired social communication (DSM-IV-TR, APA, 2000). While many researchers have observed pragmatic language deficits in individuals with autism, few relevant studies have been conducted in a conversational context. In this study we aimed to identify differences in pragmatic language in conversations between typically developed individuals and individuals with high-functioning autism (HFA) who show the outcome of this developmental disorder. We hypothesized that the HFA group would have fewer discourse markers, less supportive interruptions, and more off-topic responses compared to their typically developed peers.
In two studies, HFA (n=8) and typically developed (n=8) participants took part in guided discussions, and conversations were recorded and transcribed. The data from Study 1 has been analyzed while the data from Study 2 is still being coded.
Usage of the discourse marker like was analyzed in both conversations; preliminary results showed that the typical adults were more likely to use like (n=100 times/30 minutes) compared to the HFA group (n=2 times/60 minutes).
Interruptions were analyzed for the outcome of the interruption event, as well as categorized for their supportive or non-supportive role in conversation. The nature of these interactions differed across the groups; in interruptions in HFA speech, any person was likely to win the turn, whereas in typical conversation, the interrupted person often reclaimed the turn. Moreover, over half of interruptions in HFA conversation functioned as non-supportive, commonly shifting the conversation away from the previous speaker, while interruptions were supportive over half of the time in typical conversation.
Lastly, the HFA group was off-topic over five times more frequently than the typical group.
These language patterns will provide useful information about conversational interaction in adults with HFA, and these patterns have potential uses in interventions to assist children in the developmental stages of this disorder.

First language acquisition
Pragmatics

Maternal utterances about agents and actions while reading picture books depicting scenes

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Abstract

This study investigated maternal utterances during joint picture-book reading from the perspective of scaffolding (Bruner, 1981). Unlike previous studies focusing on labeling (Ninio & Bruner, 1978), this study examined the utterances made about agents and actions while participants viewed pictures of scenes. Our first goal was to investigate maternal responses to children's utterances about agents and actions, focusing especially on whether mothers shifted from giving to requesting information. The second goal was to investigate maternal referential choices. Unlike previous studies focusing on pragmatic features (Sethuraman & Smith, 2010), this study examined changes in maternal referential choices as children aged.
Eighteen pairs of Japanese mothers and children were observed when the children were 20 and 27 months of age. The pairs were given a picture book depicting 24 animals engaged in everyday behavior. Maternal responses following children's utterances about the agent and action in the pictures were coded as "imitation," "elaborative information giving," and "elaborative information asking." Maternal referential choices for each picture were coded as "agent and action," "agent only," "action only," and "other."
Mothers decreased the proportion of imitation and elaborative information-giving responses and increased the proportion of elaborative information-asking responses following children's utterances about agents as their children aged. We found no differences in maternal responses to children's utterances about actions as a function of children's age. In terms of referential choice, mothers decreased the proportion of action-only and increased the proportion of agent and action as their children aged.
The results indicate that mothers changed their elaborative style from giving to requesting information and broadened their referential range from action only to including agents as their children developed. These results show that mothers decreased the scaffolding and raised the ante as children aged.

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Cognition and language development
Language, general

Language and working memory in children with differing trajectories of prelinguistic communication skills

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Abstract

Prelinguistic communication skills, such as gestures, joint attention, early vocalizations and symbolic abilities, have been shown to have predictive connections to later language difficulties, especially when there is slowness in several areas of prelinguistic development (Paul & Roth, 2011). In addition, it has been suggested that limited verbal working memory capacity acts as a risk marker for SLI, implying that working memory deficit might have a primary role in developmental language disorder (Petruccelli, Bavin, & Bretherton, 2012). The evidence regarding long-term repercussions of early language delay and working memory deficits, such as related academic, behavioral and social difficulties, warrant early identification. However, studies that take into account the various prelinguistic predictors simultaneously in order to identify children with a risk for persistent language difficulties are still few. In addition, studies that explore the connections between prelinguistic cognitive skills and later working memory ability are lacking.

This study focuses on developmental trajectories of prelinguistic communication skills and their connections to later language and working memory abilities. The children's (n=271) prelinguistic communication skills were collected at 12, 15, 18, and 21 months using the CSBS-DP (Wetherby & Prizant, 2002) parental report. Using latent profile analysis six groups of children with differing developmental trajectories of prelinguistic communication skills were identified. The six groups were then compared on group and individual level on performance in psychometric language and working memory tests at age 5;3 (follow-up subsample n=91).

The children in the groups presenting possible developmental risks at prelinguistic stage performed more weakly in psychometric tests of working memory and language compared to children with no early risk. A pertinent issue in the developmental process was the accumulation of early deficiencies.

The results support the potential of multifaceted and recurring early screening in identifying children at risk of developing language difficulties. The results also add to the mounting evidence of developmental interplay between language and working memory development.

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First language acquisition
Morphology

Complementation and acquisition: The case of Turkish

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Abstract

How Turkish speaking children handle complementation is an issue of considerable interest in respect of the fact that various nominalizers (i.e.,-mA, -mAk(ğ), and -DIk(ğ)) take part and their distribution is not clear-cut. We postulate that complementation would pose certain challenges to Turkish-speaking children and intend to uncover the path children follow in its acquisition. Several issues stand out regarding the use of complementation: i. For the most part, the choice of –mAk (for co-referential subjects)/-mA (for non-co-referential subjects) vs. -DIk is determined by the matrix-verb hence an acquirer of Turkish is expected to entertain certain hypotheses regarding the class of verbs that are compatible with -mAk and -mA as (1a/b), e.g. the verb iste-'want', or -DIk (1c), e.g., the verb bil- 'know' and may err until the constructions are fully sorted out. ii. Furthermore though the distribution of -mAk and -mA is rule-governed regarding coreferentiality, the presence of verbs such as sev- 'like' that allows the use of -mA for coreferential-subjects as well, can confound the distribution as in (2a) and render erroneous forms with verbs (e.g. hoşlan 'enjoy' in (2b)) that do not allow the use of both -mA and -mAk.

(1) a. Emre [✓uyu-mAk/*DIğ-I] ist-iyor.
sleep-NOM want-PROG.3sg
'Emre wants to sleep.'
b. Emre [Aslı-nın ✓uyu-mA-sIn-I /*DIğ-In-I] ist-iyor.
-GEN sleep-NOM-POSS-ACC
'Emre wants Aslı to sleep.'
c. Emre [Aslı-nın ✓uyu-DIğ-In-I/*uyu-ma-sın-ı/] bil-iyor.
sleep-NOM-POSS-ACC know-PROG.3sg
'Emre knows that Aslı has slept.'

(2) a. Emre [✓uyu-mAk-I/ ✓uyu-mA-sIn-I] sev-iyor.
'Emre likes sleeping.'
b. Emre [uyu-mAk-tan/*uyu-ma-sın-dan] hoşlan-ıyor.
'Emre enjoys sleeping.'

By evoking complementation-use through picture-prompted elicitation-tasks we have tested 10 children in two groups and have observed a developmental difference between G1(4;01) and G2(3:01) whereby G1 had a complementation-use of 98%, and G2, 84%. Our results have further shown that when to use which complementizer is demanding and children err in the choice of affixes and prefer to use -mA in contexts requiring -DIk with an error-rate of 25%,
-mA in contexts requiring -mAk with a rate of 21.5% and -mAk in contexts requiring -mA with a rate of 18%. High error rates clearly illustrate how challenging complementation use is for a Turkish-speaking child.

Child bilingual language development
Semantics and lexicon

Look at the gato! Maternal language-mixing in speech to toddlers

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Abstract

Given the high incidence of bilingualism worldwide, many children grow up receiving input in more than one language. Furthermore, this input may contain instances of the languages being "mixed" together. Only a few studies have examined the effect that language-mixing might have on vocabulary development (e.g. Byers-Heinlein, 2013; Place & Hoff, 2011). These have relied primarily on caregivers' recollection and estimates of language-mixing instances present in their speech addressed to their child. The current work expands on this topic by examining actual speech samples produced by Spanish-English bilingual caregivers during a 15-minute play session that was recorded and later transcribed and analyzed. We examined the amount and nature of parental language-mixing and how this form of input influences bilingual vocabulary development in 18- to 24-month-olds. Data from 18 caregiver-child dyads revealed that all parents mixed the two languages at least once during the session, and some switched languages quite often (over 1/3 of utterances produced during the study). Caregivers produced both inter-sentential and intra-sentential language switches, suggesting that it is not uncommon for young children to be frequently exposed to mixed-language sentences. There were no correlations between the degree of such language-mixing and the size of children's vocabulary (all $p > .05$). Additionally, although bilingual parents often repeated words across their two languages (e.g., look it's a doggy, perrito), this did not result in children having more translation equivalents in the vocabulary. To summarize, analyses of actual recordings of speech produced by bilingual caregivers suggest that parents mix languages fairly often in the speech that they produced when addressing children (this is the case even within sentences), but this input does not appear to delay vocabulary development.

Cultural and social factors in child language development
Language, general

Forbairt na Gaeilge: Na Meánchéimeanna i measc Páistí Líofa sa Ghaeltacht agus sna Gaelscoileanna (The Development of Irish: The Middle Stages of Development of Proficient Children in the Gaeltacht and Irish-Medium Schools)

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Abstract

Irish is a threatened language undergoing accelerated change and convergence with English. Previous research by the first author indicates variable performance among even highly proficient adult speakers of Irish on later-acquired features like grammatical gender. Thus it is highly significant for children acquiring Irish that the Irish sociolinguistic context contains proficient speakers who show different levels of rapid change in Irish grammar and convergence with English. Gathercole and Thomas (2009) studied aspects of Welsh acquisition and suggest that performance in both of the bilingual's languages is significantly correlated with cumulative language experience, and that language learners may need to be exposed to a "critical mass" of grammatical speech in order to successfully master the later-acquired aspects of the language. Data are reported here from both adult (n=60) and child speakers (n=50). The adult performance on three tasks, designed to measure morphosyntactic knowledge in Irish, indicates that even proficient Irish speakers have varying levels of mastery Irish morphosyntax. The results show great variability in performance, with very few fluent speakers reaching ceiling. This has implications for developing native speakers as a lack of sufficient and accurate input means that they may not acquire those features normally acquired in middle childhood 'by ear'. Tests of child mastery of later-acquired features of Irish morphosyntax are currently being carried out (n=50), using the same measures used with the adults, in addition to measures of receptive morphosyntax and vocabulary. The child speakers are aged 7 – 11 and come from a range of language backgrounds (assessed using a specially designed Language Background Questionnaire [LBQ]). Performance on this battery of measures will be reported, and contextualised using the LBQ and adult data. The validity of the expectation that children reach 100% accuracy in Irish when the language they are hearing is showing such high levels of variability and change is considered.

Cognition and language development
Phonetics and phonology

Phonological Priming in Children's Spoken Word Production: Varying Effects of Phonological Overlap between Distractors and Targets

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Abstract

Our study used a cross-modal picture-word interference task to explore phonological processing in spoken word production. Participants named pictures in the context of auditory distractors that were phonologically related to the name of the target picture (e.g., 'bell' paired with a picture of a bed), unrelated ('lock' with bed), identical ('bed' with bed) or baseline ('good' with bed). Previous work (Seiger-Gardner & Brooks, 2008; Seiger-Gardner & Schwartz, 2008) suggested that effects of phonologically-related distractors varied as a function of their timing relative to pictures: early distractors at negative stimulus onset asynchronies (SOAs) tended to produce interference or no effect whereas late distractors at positive SOAs produced facilitation. Whereas the late phonological priming effect was robust across ages and clinical subgroups, the early phonological interference effect was larger in children with language impairments and in younger children relative to their typical and/or older peers.

The present study examined phonological priming and interference effects in a diverse sample of school aged children (N=40, age range 6;7-11;7) varying markedly on standardized measures of verbal and nonverbal abilities (CELF-4, PPVT, TONI-3). We varied the amount of overlap for phonologically related items across items: Half comprised a high overlap condition sharing onset consonant(s) + vowel (e.g., 'bell' paired with bed) and half comprised a low overlap condition sharing only onset consonant(s) (e.g., 'chair' with cheese). Four SOA conditions ranged from -750 to +150. Phonological priming effects were stronger for the high overlap condition at SOAs ranging from -450 to +150. For the low overlap condition, priming was evident only at SOA +150. In contrast, effects of identical distractors peaked at SOAs -750 and -450, suggesting a distinct anticipatory mechanism. Whereas group means provided no evidence for phonological interference, follow-up analyses will examine whether such effects are present in the subgroup of children with language impairments.

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First language acquisition
Semantics and lexicon

Learning novel transitive verbs in Japanese-, French- and English-speaking infants: A cross-linguiitic study

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Abstract

Cross-linguistic research on children's expressive vocabulary has shown that the acquisition of verbs is influenced by syntactic and pragmatic properties of the language children are learning (Tardif, 2006). The present study investigated whether early verb learning processes are also influenced by the properties of languages by studying how Japanese-, French-, and English-speaking infants map new transitive verbs onto dynamic motion events.

Using an infant-controlled habituation method, 20-month-old infants in each language group (N=20) habituated to two animation events of a familiar agent (a bunny) performing a novel transitive action (jumping-on/knocking-down) on a novel object which differed in color and shape (blue peanut-/red rectangular-shape). Each action event was paired with a novel word embedded in a transitive verb sentence frame (e.g., He is goping/neeming the toy). Once habituated, they were presented with a baseline and three switch test trials (object-switch, action-switch, word-switch). Because infants tend to look at the switch trial perceived as novel longer than at the baseline, it is possible to determine whether their interpretation of novel words depends on morphosyntactic cues provided in the input sentences.

Results showed that Japanese- and French-speaking infants looked significantly longer at the action-switch trial than at the baseline (ps <.05). In contrast, English-speaking infants looked significantly longer not only at the action-switch but also at the object-switch trial than at the baseline (ps <.05). These results demonstrate that both Japanese- and French-speaking infants are able to map novel transitive verbs onto actions using morphosyntactic cues correctly by 20-months of age, whereas English-speaking infants are not. Cross-linguistic differences in infants'sensitivity to verb morphosyntactic cues between French and English but not between French and Japanese suggest that early verb learning processes are influenced by pragmatic characteristics of input such as emphasis of object nouns in English-speaking mothers' child-directed speech (Fernald & Morikawa, 1993).

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Other (please, specify in the box below)
Motor and language development
Semantics and lexicon

Exploration as a mechanism explaining the link between the onset of walking and (spatial) language.

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Abstract

Embodiment theory suggests that language develops through sensorimotor interactions with the environment, also known as exploration (Smith & Gasser, 2005). The attainment of independent walking dramatically changes these interactions and is important for the formation of spatial concepts (Campos et al., 2000). However, with regard to the role of walking in (spatial) language development evidence is still scarce. The current study focused on the role of the attainment of walking and exploration in (spatial) language development. Two cohorts of 30 Dutch children were followed from 9 to 24 months and from 20 to 36 months respectively. A combination of tests, observations and parental reports was used to obtain measures of vocabulary, spatial language (i.e., locative prepositions and verbs containing a direction), motor development and exploration behavior during five home visits.

First, the development of productive vocabulary between ages 16 and 28 months was modeled by applying augmented cohort-sequential latent growth-modeling. Next, the age of attainment of walking was added as a predictor. Results show that an earlier age of walking predicts a higher mean slope but not a higher mean intercept. Thus, while early walkers did not start off with a higher level of vocabulary, their vocabulary grew more during this period. Second, using observations of free play with a standard set of toys, exploration was scored on a number of dimensions, including the amount of self-locomotion used during exploration (which was related to walking). Results show that engaging in more self-locomotion predicted higher scores on spatial language later on. While correlations between the age of walking and language decreased with time (suggesting that late walkers catch up), relations between exploration and language remained relatively strong.

Findings are in line with the hypothesis suggesting that exploration behaviour might be a key mechanism underlying initial relations between motor and language development.

First language acquisition
Semantics and lexicon

Adjectives in the Acquisition of Turkish

Özcan, F. Hülya

Abstract

Acquisition of adjectives have been touched upon in a number of research in Turkish. Ekmekçi (1979) reported that, in her data, adjectives were used in attributive expressions as early as 1;7 and predicative adjectives were productive at the age of 2;0. Alpöge (1991) studied the order of the adjectives and young children order the adjectives from general to specific and this finding is parallel to the cognitive development of children. Sofu (1995) studied the emergence and the frequency of word classes in Turkish-speaking children and concluded that adjectives are acquired after nouns and verbs. Although adjectives form the third group of word classes in the acquisition of Turkish, children use both attributive and predicative adjectives at early ages. Sofu and Türkay (2010) studied the semantic composition and syntactic position of early adjectives in the speeches of 4 children followed longitudinally between the ages of 2;00 and 3;06. The results indicated that predicative adjectives are followed by nominal adjectives and elliptical use of adjectives, which is a language specific characteristic in Turkish (p. 359). However, Sofu and Türkay stated that more comprehensive study is required to generalize the results.

Taking the findings of these studies as a starting point, we attempt to look at the acquisition of adjectives in a wider range of age in order to display a developmental profile in the use of adjectives in Turkish. This study, therefore, aims to draw a developmental profile regarding the form and function of adjectives used in the speech of monolingual Turkish speaking children.

The data was collected from spontaneous speech of monolingual Turkish speaking children between the ages of 1;6 and 5;6.

For the data analysis, form and function of each occurrence of adjectives are defined and categorized. The raw numbers and frequencies will be considered in terms of age to reveal differences across ages.

Language development in atypical populations
Language, general

Co-speech gesture in atypical language development - A case study -

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Abstract

This research investigated the links between speech and gestures in children with SLI. Considering SLI as an impairment that might show a dissociation between language abilities and gestural abilities, we use a neuropsychological paradigm and analyse the productions of an index case compared to a control group. Do children with SLI gesture the same way as tipycally developing children do (Grazziano and Gullberg, 2013) ? Do they gesture more to compensate their lack of linguistic abilities when they communicate (Iverson and Braddock, 2011) ?

To contribute to the ongoing debate, we filmed a eight year old girl with SLI engaged in an oral narrative task. Like her 20 age-matched typically developing peers, she was videotaped while performing a complex narrative task consisting in telling a story to an experimenter after having watched a short wordless cartoon. For every child, speech variables (words, clauses, cohesion and subordination cues) and gestural variables (gesture strokes, shape and function) were transcribed using Elan as an annotation tool.

In contrast with the normally developing children who produced a lot of gestures of different types, the child with SLI produced less gesture stokes and qualitatively different ones. She also obtained poorer performances on a large part of the linguistic variables.

However, like children from the control group, the number of clauses and the number of gestures strokes were closely dependant. The SLI child did not compensate her specific language impairment with gestures. SLI doesn't seem to show the above mentioned dissociation between language and gesture abilities. This finding suggests that speech production determines a large part of gesture production. Spontaneously, when the first lacks, the second lacks too.

As language production must be trained in SLI children, so gesture production can be trained too in order to help the child develop his abilities to communicate. We discuss the utility of early intervention to develop such abilities.

Iverson and Braddock,(2011) Gesture and Motor Skill in Relation to Language in Children With Language Impairment, Journal of Speech, Language, and Hearing Research, Vol.54, 72-86. doi:10.1044/1092-4388(2010/08-0197)

Graziano, M., Gullberg, M (2013) Gesture production and speech fluency in competent speakers and language learners, Tilburg Gesture Research Meeting (TiGeR), 19-21 june.

Language development in atypical populations
Pragmatics

Narrative skills in children with SLI: A case of limited capacity?

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Abstract

Telling stories constitutes a large component of every day activies and also plays a big role at school. Children with SLI are known to struggle with oral text production. Colozzo et al. (2011) found that school children with SLI often produce stories with either good content but many grammatical errors or poor content with hardly any grammatical mistakes. In contrast, typically developing children show a balanced pattern of narrative skills. The authors conclude that the dissociation in children with SLI is due to limited processing capacity.
The current study re-examines these finding. It more specifically asks whether there is a dissociation of skills in macrostructure, coherence, cohesion and/or frequency of grammatical mistakes in oral stories of children with SLI. In which narrative categories do children with SLI struggle most? And to what extent do vocabulary and grammatical skills, short term memory and working memory capacity contribute to children's performance?
40 children with SLI and 44 children without SLI in 1st and 4th grade were given a test on narrative skills. The test provides information on macrostructure, coherence, cohesion as well as the grammaticality of the text. In addition, data was gathered about the children's nonverbal intelligence, vocabulary,- and grammatical skills, short-term memory and processing capacity .
Children with SLI were found to achieve lower scores in all narrative categories. In 1st grade children's narrative skills seem to be primarily influenced by deficits in grammar as well as in processing capacity. In 4th grade grammatical skills no longer play a a big role . However, the influence of limited processing capacity remains unchanged.
The results indicate that a deficit in processing capacity seems to have a big influence on the narrative skills in children diagnosed for SLI.

Colozzo, P.,Garcia, R.D.; Curran, M.; Gillam, R.B.; Johnston, J.R.(2011):"Content and Form in the Narratives of Children with Specific Language Impairment " In: Journal of Speech, Language, and Hearing Research. 54. 1609-1627.

Neurobiology in typical and/or atypical language acquisition
Language, general

How toddlers at risk for developmental language disorders process semantic and phonological information in an ERP picture-word paradigm

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Abstract

Research question:
Toddlers with atypical or delayed language development are at risk for developing persistent language disorders. So far, little is known what the underlying mechanism is of their language difficulties, and why some children catch up with their peers and others do not. Here we investigate whether toddlers at risk for language disorders have difficulty with phonological processing and/or semantic processing during word recognition using event-related brain potentials (ERPs).
Methods:
Toddlers between 30 and 42 months were included with atypical or delayed language development (risk group, language abilities at least 1.3 SD below the mean). The control group consisted of age-matched children with a typical language development. Children saw a picture (e.g., a cat) and heard a matching word /look, a cat/, a semantic mismatch /look, a book/, or a phonological mismatch /look, a cas/. In total, 90 picture-word pairs were presented, while ERPs were measured. Phonological mismatches were always pseudowords with a violation in place of articulation, manner of articulation or both, for the final phoneme. Prior to the ERP experiment, we tested if children were familiar with the one-syllable Dutch words used in the experiment.
Results:
It is known that both semantic mismatches and phonological mismatches induce N400 effects compared to matching words (Desroches, Newman, Robertson, & Joanisse, 2012). We expect the risk group to have smaller N400 effects or later N400 effects than the control group with typical language development. Moreover, we expect the children at risk to have more difficulty with phonological processing relative to semantic processing. Preliminary results will be presented at the poster.
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Child bilingual language development
Semantics and lexicon

Considering Cognate Effects in Child Spanish-English Bilinguals during Receptive Vocabulary Assessment with PPVT-III, Forms A and B

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Abstract

The Peabody Picture Vocabulary Test-III (PPVT-III) is a widely used measure of receptive English vocabulary; the test was normed on monolingual English speakers, but is frequently used to assess English-speaking bilinguals. Our study considers the accuracy of 73 child Spanish-English bilinguals (mean age = 54.12 months, SD = 7.28) on the PPVT-III, Forms A and B, to 1) better understand the "cognate word advantage" in young Spanish-English bilinguals and 2) discern whether the presence of cognates on either test form disturbs the test's design.

Numerous studies attest to the cognate advantage in adult bilinguals, wherein speakers process cognates (words that are similar in two languages, such as triangle in English and triángulo in Spanish) faster than non-cognates (e.g., Rosselli, et al., 2012). Because 44 of the 204 prompts on Form A are cognates, the PPVT-III is useful for studying cognate comprehension; this cognate prevalence also motivates us to understand whether young bilinguals treat cognates and non-cognates differently.

Initial analyses reveal that average accuracy for Form A cognates (59.21%) was significantly higher than for non-cognates (51.51%); $t(72) = 3.002$, $p = .004$. Form A results lead us to believe that the cognate advantage is robust and will be evident in Form B responses (analysis currently underway).

The higher accuracy rate for cognate items suggests that they are relatively easier. Therefore, unequal cognate distribution between forms may cause a disparity in difficulty levels—an important consideration for test administration. Irregular cognate distribution within each form must also be considered, as that could disrupt the PPVT-III's goal of increasing difficulty from start to finish.

Our results shed light on L1 and L2 interaction (i.e., L1 influences performance on measures of L2 vocabulary) in young children. They are also clinically relevant, with the potential to improve PPVT-III administration and result interpretation for bilinguals.

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Language development in atypical populations
Language, general

Modeling Language Outcomes in At Risk Infants from the Early Head Start Research and Evaluation Project: A Longitudinal Study at 14, 24, and 36 Months

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Abstract

Research has emphasized the importance of the social context for understanding early language development. However, the extant literature lacks a single multivariate model that concurrently examines influences of the home environment, dynamics of mother-child interaction, maternal characteristics and child risk factors on language development during infancy. Our research used Structural Equation Modeling (SEM), via a multistep model-building approach, to examine predictors of individual differences in language development in an at-risk, low-income sample from the Early Head Start Research and Evaluation Project (EHSRE). We hypothesized that perinatal risk and child gender, as well as the quality of adult-mediated interactions, home environment, and maternal mental health would predict language outcomes from the first year of life to three years of age. Our model used a subset of the EHSRE sample comprising native English speakers with language outcomes at ages 14, 24, and 36 months. All families were low income with an almost even distribution of boys (N=1,141) and girls (N=1,104). The 14-month model provided an excellent fit to the data (RMSEA = .041, CFI = .923), and identified direct and indirect effects of perinatal risk, gender, child cognition, joint attention, negative mother-child interaction, maternal mental health, and home environment on language development. The direct and indirect influences at 14 months were highly predictive of language outcomes at 24 and 36 months, with the later models also showing an excellent fit (RMSEA ≤ .046, CFI ≥ .927). The multiplicity of factors linked to language outcomes supports cumulative risk models of development (e.g., Sameroff et al., 1987), and extends relationships documented in middle-to-high income samples to infants growing up in poverty. The findings suggest the need for early interventions starting in the first year of life, as child, maternal and environmental risk factors strongly influence language and cognitive development into the preschool years.

Language development in atypical populations
Pragmatics

Comprehension of novel metaphor in Autism Spectrum Disorder

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Abstract

Children with Autism Spectrum Disorder (ASD) experience noticeable difficulties with figurative language. These have been linked to their impaired theory of mind (Happé 1993) or to the overall linguistic – and especially semantic abilities (Norbury 2005). Yet, immature linguistic skills might affect the comprehension of figurative language regardless of autistic symptomatology (Gernsbacher & Pripas-Kapit 2012).

This study investigates comprehension of novel, rather than conventional metaphors, the latter of which require previously acquired knowledge, in 21 English-speaking children with ASD (Chronological Age:5;5-15;3; non-verbal IQ KBIT SS:40-127; M=76.7; BPVS-2 SS:40-121, M=82), matched to younger typical controls (CA: 2;4-7;3) on non-verbal Mental Age (MA) (KBIT raw: ASD M=16.57; TD M=15.8); and verbal MA (BPVS-2 raw: ASD M=65;TD M=57).

We used a task minimising cognitive demands to determine where the difficulties with metaphor comprehension arise – i.e., insufficient vocabulary knowledge, difficulty with taking context into account, or inability to make a pragmatic inference. In an act-out reference assignment task, children were shown pairs of minimally different toys and asked to choose the one matching the metaphorical description (e.g., 'a car with a sick foot'). Children were subsequently also tested on their knowledge of the key vocabulary used in the metaphorical items.

A regression analysis model showed no statistically significant difference between groups, with both performing near ceiling on all 6 experimental items. Performance of the ASD group was not linked to their CA, but was highly correlated with non-verbal and verbal MA. In the control group, CA was somewhat relevant to their success in interpreting novel metaphors, but again non-verbal and verbal MA played a more important role.

Contrary to the literature showing that metaphor comprehension is significantly impaired in ASD, our results indicate that a methodology that controls for vocabulary knowledge and minimizes the cognitive demands of the interpretation process helps children with ASD correctly interpret novel metaphor on par with younger controls.

Word count (without references): 300

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First language acquisition
Morphology

Cue-driven learning in English production and comprehension

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Abstract

Previous research has shown that young children learning English are better at comprehending sentences with multiple convergent cues to number than sentences with fewer or no cues (e.g., That sheep is jumping vs. The sheep jumped, see, e.g., Nicolaci-da-Costa & Harris, 1983, 1984). With regard to production, research shows that children start producing plural nouns by around 22-24 month (e.g., Cazden, 1968; Mervis & Johnson, 1991, Barner et al. (2007) and, by the age of 6, children seem to be proficient in the production of plural for regular nouns, though not for irregular nouns such as tooth or mouse (Graves & Koziol, 1971). The present research brings these separate strands of research together by comparing production and comprehension of sentences with different numbers of cues to number by the same participants. We examined English-speaking children's production and comprehension of sentences with different number of cues in three studies. The first combined the singular vs. plural of nouns with present-tense verbs (e.g., The cat jumps vs. the cats jump). The second combined the singular vs. plural of nouns with the present-progressive (e.g., The cat is jumping vs. the cats are jumping). Both of these cases involve cues to number on both nouns and verbs (though different ones). The third study used the past-tense (e.g., the cat jumped vs. the cats jumped) where there is only one cue to number in the noun. Comparisons within and across these studies not only confirm past findings that 'more cues improve performance', but –more importantly—provide insight into production/comprehension asymmetries and the extent to which sensitivity to the number of cues present reflects partial acquisition of grammatical knowledge.

Sign language acquisition and gestures
Language, general

Language Difference vs. Language Disorder: Evidence from Culturally and Linguistically Diverse Deaf Students Communicating in American Sign Language (ASL)

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Abstract

A recent survey documented that 24 percent of deaf students in the United States are from homes where a language other than American Sign Language (ASL) or English is used (Gallaudet Research Institute, 2011). A significant number of these students experience difficulty mastering ASL, and many are misdiagnosed as language impaired (Quinto-Pozos, Forber-Pratt, & Singleton, 2011). Our research addresses the critical need to accurately assess the natural sign language performance of culturally and linguistically diverse school-aged deaf students. We present results of a study using a standardized test of ASL to differentiate typically developing (i.e., language-different) vs. atypically developing (i.e., language-disordered) deaf children from multicultural and multilingual backgrounds. The investigation involved 30 deaf signing children (8-14 years) referred by teachers. As described by the teachers using predetermined criteria (e.g., time exposed to ASL in the classroom, fluency in ASL), 15 of the children evidenced typical and 15 atypical ASL abilities. We assessed the 30 deaf children's performance using the norm-referenced test of ASL across three linguistic domains: 1) Phonology and Lexicon (phonological parameters, fingerspelling, lexical meaning); 2) Morphology (classifier constructions, verb agreement) and Syntax (negation, sign order, conditionals); and 3)Semantics/Pragmatics/Discourse (perspective shift, turn taking). The results were compared to performance on tests of non-verbal intelligence and social and motor ability. We found that the atypical deaf children evidenced significant language impairment unrelated to reduced cognitive, social, or motor abilities or insufficient exposure to ASL. We delineate specific patterns of test responses and linguistic errors in ASL performance and describe profiles of language-different vs. language-impaired children. Finally, we discuss theoretical and practical implications for differentiating language difference from language disorder in this population.

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Cultural and social factors in child language development
Language, general

Relationships between Language Performance and Social and Behavioral Functioning of Preschool Children from Low-income Families

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Abstract

Language skills, social skills, and behavioral functioning are related among children from low-income families, as indicated by standardized tests of children's language abilities and parent and teacher ratings of social skills and behavior problems (Qi, Kaiser, & Milan, 2006). The purpose of the study was to examine (a) the language performance among 236 English-speaking and Spanish-speaking preschool children from low-income families, and (b) the relationships between language skills and parent and teacher ratings of children's social skills and problem behaviors.

Methods

Participants were 236 children ages 3 and 4 (52.5% boys) from Head Start centers that serve children from low-income families in a southwestern U.S. city. The Preschool Language Scale-5 English (PLS-5 English, Zimmerman, Steiner, & Pond, 2011) was administered individually to 169 English-speaking children, and the PLS-5 Spanish (Zimmerman, Steiner, & Pond, 2012) was administered individually to 67 Spanish-speaking children. Parents and teachers completed the Social Skills Improvement Systems (SSIS; Gresham & Elliot, 2007). Parents and teachers completed the Child Behavior Checklist (CBCL or CTRF; Achenbach & Rescorla, 2001).

Results

The findings showed that (a) children scored significantly lower on the PLS-5 Auditory Comprehension (AC), Expressive Communication (EC), and Total Language scales than did the standardization sample. Children's AC, EC, and Total Language scores were correlated positively with parents' and teachers' rating of social skills on the SSIS (range: $r = .19$ to .34, $p < .05$, two-tailed) and negatively correlated with parents' and teachers' rating of behavior problems (range: $r = -.24$ to $-.30$, $p < .05$, two-tailed).

Discussion

Findings suggested that children with low language skills are at risk for early-emergent behavior problems. Continued monitoring of children with low language abilities for emergent problem behavior and preventative intervention should be planned.

Language development in atypical populations
Phonetics and phonology

Phonological processing of consonants and vowels in French children with Specific Language Impairment: Impact of phoneme position

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Abstract

Introduction - Specific Language Impairment (SLI) is a communication disorder that affects several levels of language development in spite of normal intellectual capacity and unimpaired visual, hearing or physical abilities (Leonard, 1998). Among the hypotheses that have been proposed to explain the origin of these difficulties, the phonological deficit hypothesis has received particular attention (Joanisse, 2004). Difficulty in phonemic discrimination has been observed across several studies in children with SLI. However, these studies have generally focused on the processing of consonants and very little is known regarding vowel processing in children with SLI. The only data available come from studies with dyslexic children (Bernstein, 2009) and suggest that vowel processing might be deficient as well. The goal of the present study was to examine the ability of children with SLI to detect pronunciation errors of consonants and vowels, as a function of their position within words.
Materiel and method – Twenty children with SLI (mean age = 10;1) and 20 typically-developing children matched for vocabulary (mean age = 9;2) were involved in the study. They were presented with a picture of an item that was pronounced correctly or incorrectly by a recorded voice, and were required to indicate via two response keys whether the word was correctly pronounced or not. The mispronunciation affected either a vowel or consonant, at the initial, medial or final position.
Results – Children with SLI were better able to detect consonant than vowel pronunciation errors, independently of their position within words. Typically-developing children were also better able to detect consonant than vowel pronunciation errors, but only at the middle or at the end of words.
Conclusion – Children with SLI have poor phonological representations and these representations appear to be holistic, since they do not represent correctly individual phonemes (in particular vowels).
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Child bilingual language development
Language, general

Calculating MLU in bilingual children

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Abstract

Language development in bilingual children is often related to the notion of language dominance since it is nearly impossible to be exposed to the two languages equally often. Objective measurements of bilingual development include mean length of utterance (MLU), mean length of the five longest utterances (UB5), multi-morphemic utterance (MMU) and many more. It is usually assumed that the dominant language is the one with, for example, a higher MLU or MMU compared to the other language. MLU is almost always calculated for each language context (including both monolingual and code-mixed utterances) and, based on this, language dominance is established. There is no study that has calculated MLU within each language context separately for each language type: monolingual utterances in each language and code-mixed utterances. Thus, in the current study, we analysed the MLUs of three German-English bilingual children, aged 2;01 – 3;11; for each language context and, additionally, within each language context for the German and English monolingual utterances as well as for the mixed utterances. We also compared these MLU results with the relative proportions of these three types of utterance for each recorded month. Our results show that language preference was reflected in MLU values: the more children spoke in one language the higher the MLU was in that language. However it was the mixed utterances that had the highest MLU for all three children.
These results will be discussed in in terms of development and language processing.

Language development in atypical populations
Syntax

Ultimate Attainment in Language Acquisition by deaf and hard of hearing (d/hh) learners

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Abstract

Through investigating the acquisition of Chinese passives, this study addresses the question of d/hh learners' ultimate attainment in written form of the surrounding spoken language. We also examine whether d/hh learners with restricted spoken language input may lead to syntactic deficits (Friedmann & Szterman 2006) as Chinese long passives are said to involve a null-operator movement predicated on the subject and short passives involve an A-moved PRO controlled by the matrix subject (Huang et al. 2009).

In this study, both comprehension accuracy and reaction times in an on-line picture selection task were recorded for increased reaction times indicate a processing difficulty. Passive and active sentences tested are reversible, thus the agent and patient shown in the picture are animate. 53 prelingual d/hh learners aged 15-24, divided into Low Level learners (LLs) and High Level learners (HLs) based on an independent language test, and 35 Native Controls (NCs) participated in the experiment. With respect to comprehension, a ceiling effect was found in HLs and NCs, regardless of whether actives or passives. LLs performed significantly worse than other two groups in short passives (M=0.78) and long passives (M=0.69), but not in actives (M=0.97). With respect to RTs, data show that both HLs and LLs responded significantly more slowly than NCs in both passives and actives ($p<.05$), but difference was not found between HLs and LLs.

Results indicate that in terms of grammatical knowledge, d/hh learners can reach native-like competence, as the performance of HLs. Although difficulties of comprehending passives were observed in some LLs, the findings do not reflect a persistent deficit of syntactic movement. In terms of grammatical processing, even near native d/hh learners significantly differ from native speakers. The processing delay may due to computational difficulties that d/hh learners need more resources to process the language.

Cognition and language development
Language, general

The Effect of Show Gestures on Attentional Processing of Language in Infants 9-15 Months of Age

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Abstract

Background: Our prior research found that show gestures affect infant patterns of eye gaze and increase the likelihood of word learning. During a show gesture the speaker looms an object and moves it synchronously with speech, directing gaze to the object as its word is uttered. To address the role of attentional processing, and not just gaze direction, we analyzed pupil dilation as an index of the intensity of attentional processing (Laeng, Sirois, & Gredeback, 2012).
Method: Pupil diameters were obtained as 32 infants, aged 9-15 months, viewed a speaker presenting an object paired with a word in the context of infant-directed speech. The speaker used a show gesture, a static gesture, or a dynamic gesture that was asynchronous with speech.
Results: : Pupil size increased from pre-word to word utterance for the show gesture condition but not the other gesture conditions, showing that hearing the word referring to the object is not responsible for the effect. Also, no significant differences were found when the infant was looking vs. not looking at the object during the word utterance, showing that the effect of the show condition on pupil dilation is not due to looking at the object. Furthermore, a comparison of the time period before and during the gesture in the asynchronous condition found no change in pupil size, showing that the gesture itself does not lead to pupil dilation. Finally, we found for the show condition that pupil dilation was positively correlated with word learning.
Conclusion: These results reveal that a show gesture produces greater attentional processing just when an infant is most likely to be looking at an object and hearing its word. This enhanced processing appears to underlie the better word learning seen with a show gesture and is dependent on the synchrony of sight and sound.
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Literacy and language
Language, general

Do discourse-level skills in 1st grade

contribute independently to the variance in reading skills in 3rd grade?
A longitudinal study of Icelandic children.

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Birgisdóttir, Freyja, University of Iceland

Abstract

It is well established that different skills predict the development of word reading (WR) and reading comprehension (RC) (e.g. Kendeou et al, 2009). The range of componential skills predicting WR have been extensively investigated. In contrast, RC is frequently treated as a global construct and, apart from the established role of vocabulary, less is known about whether/which component skills independently predict its development (Oakhill & Cain, 2012). This poster reports some results of a three-year longitudinal study investigating the interrelationships between Icelandic children´s oral language and literacy skills in Grades 1 to 3, with a particular emphasis on the predictive role of specific discourse level skills in G-1 for RC in G-3.
Research questions: What G-1 language and literacy measures predict children´s RC as compared to WR-skills in G-3? Do specific discourse level skills, in particular Narrative comprehension and use of Story structure and subordination in own narratives, each make independent contributions to reading abilities in G-3 over and above vocabulary and reading skills in G-1?
Participants were 133 children (73 boys) who were assessed on vocabulary, phonological awareness, letter knowledge, single WR-speed and accuracy, oral narrative comprehension and narrative production in G-1 and their performances related to RC and WR in G-3.
Results: Both narrative comprehension and story structure scores independently explained significant variance in RC in G-3 after all other variables had been accounted for. In contrast, variance in WR-skills in G-3 were predicted by letter knowledge and WR in G-1. Phonological awareness and use of subordinate clauses independently predicted neither RC nor WR.
Conclusion: The results support the view that different skills predict the development of WR and RC. Furthermore, they indicate that already in the early stages of reading, measures independent of WR, such as narrative comprehension and the knowledge and use of story structure, make independent contributions to RC over and above vocabulary knowledge.

First language acquisition
Phonetics and phonology

Perception of the East-Limburgian Dutch lexical tone contrast by Dutch 6-to-12-month old infants.

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Gussenhoven, Carlos, Radboud University Nijmegen

Abstract

Speech perception becomes attuned to the native language in the course of the first year of life, according to the standard view of Perceptual Reorganization (Kuhl et al. 2006, Mattock et al. 2008). Accordingly, 6-month-olds are expected to perceive non-native phonetic contrasts, but 9- and 12-month olds may show a decline in non-native discrimination. Most studies have addressed segmental contrasts. Our study focuses on the perception of a Limburgian Dutch lexical tone contrast by Dutch infants. We investigated whether Dutch 6-, 9- and 12-month-olds discriminate the Limburgian tone contrast and whether this ability shows the predicted age-related decline.
To this end, we used the Hybrid Visual Habituation Procedure (Houston et al. 2007). Infants were habituated on a monosyllabic pseudoword, either carrying so called Accent 1 (a fall) or Accent 2 (a fall-rise). During dishabituation, infants would alternatingly hear the pseudoword with the habituated tone and with the respective other tone.
Data of Dutch 6-month-olds (n=22, range 0;5.5 - 0;6.30), 9-month-olds (n=24, range 0;8.1 - 0;9.23) and 12-month-olds (n=24, range 0;11.3 - 1;0.20) have been analyzed using a 2x3x2 mixed design ANOVA. The results of planned t-tests indeed showed a change in discrimination abilities during the first year of life, however, the results are not in line with Perceptual Reorganization theory: 6-month-olds behaved significantly different from 9-month-olds ($p = .04$, one-tailed) and 12-month-olds ($p = .02$, one-tailed): They did not discriminate the non-native tonal contrast ($F(1,64) = .03$, $p = .86$). Nine-month-olds discriminated the contrast ($F(1,64) = 9,1$, $p = .004$) and did not differ significantly from 12-month-olds, who also showed discrimination ($F(1,64) = 5.8$, $p = .02$). One possible explanation for this developing sensitivity could be a mapping onto native intonation patterns. Currently we are collecting data from Limburgian infants to investigate whether they behave similar to the Dutch infants or whether they outperform them.
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Literacy and language
Language, general

Language and attention contributions to the acquisition of decoding skills: Evidence for divergent pathways in children with and without language impairment

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Ash, Andrea, University of Utah
Guarino, Anthony, MGH Institute of Health Professions

Abstract

Problem: Language impairments, attention deficits, and reading difficulties frequently co-occur but the nature of these associations is unclear. The purpose of this study was to evaluate model invariance between children with language impairments (LI) and non-language impaired (Non-LI) children on the interrelationships among these domains via a series of hypothesized multi-models. Method: Community ascertainment and blinded assessments identified 46 cases of confirmed LI (viz: CELF-4) and 76 cases of confirmed Non-LI from a screening sample of 420 2nd and 3rd graders. Reading was measured using the WMRT and TOWRE. The DSM-IV ADHD scale from the CBCL indexed children's inattention and hyperactivity. Standardized measures of children's nonverbal IQ and memory were also collected. Results: The models were non-invariant. For Non-LI cases, there was a significant negative correlation between language and attention ($r = -0.25, p < .01$). This linear combination explained 27% of the decoding variance with Betas of 0.41 and – 0.24 for language and attention respectively. Non-word repetition, nonverbal IQ, and working memory indices failed to improve the model. In contrast, for LI cases, there was no significant correlation between language and attention ($r = -0.05$, p=ns). Only language achieved significance on decoding with a Beta of 0.48 ($p < .001$). Interestingly, non-word repetition produced a significant Beta of 0.53 when entered into the model; causing language to be no longer significant. In addition, nonverbal IQ and working memory did not significantly predict decoding. Conclusion: Our findings indicate the potential for threshold effects in which attention deficits contribute to decoding problems when language is within normal limits and phonological processing contributes when language is impaired. Our results did not align with previous reports that have modeled moderator and mediator links between language impairments, attention deficits, and reading difficulties (McGinty & Justice, 2009; Tomblin, Zhang, Buckwalter & Catts, 2000).

Cultural and social factors in child language development
Language, general

Personal narrative structure and coherence: Differences across three attachment classifications

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Abstract

Narrative is an important discourse skill learned during interactions with adults, typically the mother (Fivush, 1991). To date, studies examining relations between personal narrative and child attachment with the mother have collapsed insecure subclassifications, comparing secure with insecure children. However, qualitative differences between insecure-avoidant and insecure-ambivalent children in multiple language domains have been documented. Thus, this study examined differences in children's narratives as a function of attachment security, comparing insecure subclassifications.

Sixty-five children (33 girls, 32 boys; Mage=4;8, SD=7.8 months) and mothers were recruited from preschools in southern California. Fifty-five percent of mothers had a graduate/professional degree, and median family income was $150,000. The Attachment Story Completion Task-Revised (ASCT-R; Verschueren, Marcoen, & Schoefs, 1994) measured child attachment security, and I elicited three independent narratives about recent events, which were video-recorded and transcribed verbatim. The ASCT-R transcripts were coded into three attachment classifications (secure, avoidant, and ambivalent). The child independent narratives were coded for developmental structure and coherence using High-Point analysis (McCabe & Rollins, 1994).

Analysis of High-Point coding across attachment classifications revealed that the majority of securely attached children told narratives that were well-sequenced and coherent in theme and organization. In contrast, the majority of avoidantly and ambivalently attached children told narratives that lacked temporal or logical order. To examine the developmental appropriateness of narrative structure, I compared the High-Point structures produced by this study's sample with age-group expectations (see McCabe & Rollins, 1994). Chi-square analyses, controlling for expressive language ability, revealed ambivalent children were twice as likely as avoidant children and over three times as likely as secure children to produce narratives below age-group expectations, $\chi 2(4) = 12.02$, $p = .017$. Thus, ambivalently attached children appear to be at significantly greater risk for delayed discourse as compared to secure and avoidant-insecure children, even among a relatively well-educated and affluent sample.

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Child bilingual language development
Language, general

Understanding Without Speaking: Exploring Passive Bilingualism in Young Spanish-English Bilinguals

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Abstract

Parents of bilingual preschool children are often puzzled by the fact that their children prefer to speak only one language in everyday interaction, even though they appear to understand both languages very well. While this phenomenon has been frequently observed, it has not been systematically studied. The purpose of this study was to explore the relation between young Spanish-English bilingual children's language preferences and their language production and comprehension skills.

Participants were 115 (62 females, 53 males) Spanish-English bilingual 2½-year-olds residing in South Florida. In interview, parents reported whether their child responded in English when addressed in English and in Spanish when addressed in Spanish (using the categories Always or Not Always). Examiners administered tests of productive vocabulary and language comprehension in English and Spanish on separate days in counterbalanced order.

Parents reported high rates of language switching by their children, but the percent of children described as always answering in the same language differed depending on whether they were addressed in English or in Spanish; 45.4% of children always responded to English in English, while 30.4% always responded to Spanish in Spanish.

In order to ask whether the preference for English revealed in these output data was paralleled by differences in language proficiency, a 2(Language: English, Spanish) × 2(Measure: Production, Comprehension) repeated measures Analysis of Variance was conducted using raw scores as the outcome variables. Results indicated a significant Language x Measure interaction, $F(1, 114) = 116.61$, $p < .001$. The children performed significantly better on the measure of English than Spanish production, but they did not differ on the English and Spanish language comprehension measures.

These findings suggest that bilingual children have better production skills in the language they prefer to use, although comprehension skills in their two languages may be comparable.

Neurobiology in typical and/or atypical language acquisition
Phonetics and phonology

Different Language Learning Settings Alter the Processing of Phonotactic Properties in 6-Month-Old Infants – a Combined EEG and FNIRS Study

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Abstract

Phonotactics describes the combinatorial rules of phonemes in a given language. In language acquisition sensitivity to phonotactic properties emerges around 3 months of age. Phonotactics helps infants to extract word forms from the incoming auditory speech stream as phonotactics signals word boundaries.
In our study we investigate how neuronal responses to native (i.e., legal) and non-native (i.e., illegal) phonotactic regularities are modulated by two different language learning settings in 6- month-old infants.
Each infant underwent a pretest, a training (passive listening training or semantic training), and a posttest on three consecutive days in which phonotactically legal and illegal pseudowords were acoustically presented. The passive listening training consisted of the pure acoustic presentation of pseudowords. During the semantic training the pseudowords were combined with pictures of real objects creating an associative learning context. Brain responses were monitored by event-related brain potentials (ERPs) and functional near-infrared spectroscopy (fNIRS).
ERP results indicate a familiarization effect for phonotactically legal and illegal trained pseudowords indexed by an increasing positivity from day 1 to day 3. This modulation was larger for legal than for illegal trained pseudowords. FNIRS results reveal a decreasing concentration of oxy-hemoglobin in fronto-temporal regions with exposure to trained pseudowords and an increase for untrained pseudowords. Brain activity modulations monitored by means of ERP and fNIRS were generally more prominent in infants undergoing the semantic training than in babies belonging to the passive listening group.
Our findings demonstrate plasticity effects due to a short 3-day-training in which 6-month-old infants have been familiarized with unknown pseudowords. Differential neuronal processing was observed for legal vs. illegal pseudowords as well as for the kind of learning scenario. At this young age the semantic context might display a more attracting language learning context than passive listening thus eliciting larger brain plasticity effects compared to passive listening.

Child bilingual language development
Morphology

Weaker language in bilingual narratives

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Abstract

It is known that the two languages of a bilingual child do not necessarily develop in the same way and a balanced development between the two languages is not often to be found (Grosjean 1998). There is some evidence that the processes observed in such cases may be more similar to second than to first language acquisition (Schlyter 1993, Schlyter and Håkansson 1994). Thus, one language will turn out to be the weaker language.

The notion of a 'weaker language' is a highly under-investigated issue. One very important theoretical iussue is, however, to reveal whether the process of acquiring L1 and 2L1s is similar or different.

We approach this issue through an examination of narratives from 7 Russian-Swedish bilinguals (from 6;03 to 9;4). The narratives were collected using MAIN (Multilingual Assessment Instrument for Narratives) that investigates both comprehension and production. The language production of these bilingual children has been compared with that of their monolingual peers. We examined whether any Swedish influence has been mirrored in the following Russian features: (a) case, (b) aspect, (c) gender assignment and (d) impersonal constructions. Russian and Swedish differ considerably with respect to all these features.

Our findings indicate that the children's Russian seems to undergo structural modifications and replacements when they "construct" their variety of Russian, which often results in a change of grammar. These changes have hardly ever been observed in any monolingual acquisition of Russian. The development of L1weak and L1strong is thus possible, even in natural language acquisition. The children seem to construct the structures in the weaker language that they apparently lack, viz. constructions they have not been able to acquire due to various reasons. These findings are discussed in the light of language contact, cross-linguistic influence and the deficiencies of input.

Child bilingual language development
Phonetics and phonology

Stop consonant production in simultaneous trilingual children: an acoustic study

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Abstract

Studies investigating stop consonant productions in bilingual children indicate differentiated, but non-autonomous systems, exhibiting cross-linguistic interactions (Khattab, 2000). It is not clear, however, how children cope if the demands are even greater, i.e. where they have regular exposure to more than two languages.

This paper is the first to address this question by acoustically investigating stop consonant production in two simultaneous trilingual sisters growing up in California, aged 6;8 and 8;1. The children hear Italian from their mother and in their Italian-medium elementary school, English from their father, the school and the wider community, and Spanish from their Mexican nanny.

The results indicate accurate production of voiceless stops in English and Spanish. Interestingly, however, although voiceless stops are produced with virtually identical VOT values in Italian- and Spanish-speaking adults (Flege & Eefting, 1987; Vagges et al., 1978), the children differentiated them, realising Italian voiceless stops with inaccurately high values. We contend that these patterns arise from interlingual identification with English, with many of the children's peers speaking Italian with an English accent and engaging in code-switching. In contrast, there is no context for cross-linguistic interactions with Spanish as the children only hear the language from their monolingual nanny.

Cross-linguistic interactions are also apparent for the voiced plosives, with the children realising some of the Italian tokens with short-lag rather than lead VOT values, and thus in line with English norms. In contrast, they produced the majority of their Spanish voiced tokens as spirants, perhaps because of insufficient experience with Spanish to determine when spirantisation applies and because of the greater perceptual salience of spirants compared with stops.

Taken together, this study raises interesting questions about the conditions that favour cross-linguistic interaction, and demonstrates that the acquisition of stop consonants in multilinguals depends on a multitude of social and linguistic factors.

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Cognition and language development
Syntax

The roles of phonological short-term memory, speech perception and number on grammaticality judgments in typically developing children

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Abstract

Purpose: Sentence processing is affected by phonological short-term memory (pSTM, (1) and speech perception (2), and children with Specific Language Impairment (SLI) often show deficits in all three areas(1,3). However, what is missing is an experimental design comparing the effects of pSTM and speech perception on sentence processing in typically developing (TD) children.
Method: TD children (6-10 years) were identified based on average performance on two subtests from the Clinical Evaluation of Language Fundamentals-IV, Nonword Repetition from the Comprehensive Test of Phonological Processing, and a speech categorization under noise experiment. They were then randomly assigned to one of four experimental conditions of a grammaticality judgment task measuring subject-verb agreement: 1) control, 2) simulated pSTM deficit, 3) simulated speech perception deficit or 4) simulated double deficit (pSTM and speech perception deficits). The pSTM deficit was simulated by adding a clause between the subject and verb. The speech perception deficit was simulated by adding white noise to the sentences. The groups were matched on age, classification measures, and addional cognitive tests. Children listened to sentences and identified whether they were correct or incorrect. Both singular and plural nouns were used [e.g. the dog bark(s); the dogs bark(s)] and the dependent variable was A' scores on the task.
Results: A 4(group) by 2(number) mixed ANOVA revealed a significant main effect of group. Post hoc analyses revealed the control group did better than the pSTM group and the double deficit group. Moreover, the speech perception group even outperformed the double deficit group. There was also a main effect of number, and performance was better on sentences with singular nouns compared to plural nouns.
Conclusion: Overall, the results suggest pSTM carries more weight than speech perception during sentence processing.
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Cognition and language development
Syntax

Child-like errors in adults and child non-adult behavior: quantifiers, nominal modifiers and methodological issues

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Abstract

Children non-adult behavior in comprehension tasks with quantifiers (Q) and nominal modifiers have been given conflicting interpretations: child performance has been ascribed to non-availability of certain linguistic structures/operations, and also explained in terms of processing factors and/or the development of cognitive general abilities, as the ones related to the cognitive function. In this paper we contrast child and adult performances with universal-Qs and nominal modifiers under a different perspective: we will consider child-like adult errors in costly processing situations. Regarding nominal modifiers, we will discuss the results of two picture identification experiments conducted with 24 adults and 47 4-6 year-old Brazilian Portuguese (BP) speakers. In the adults experiment, eye-tracking data showed that first fixations are compatible with a non-recursive interpretation of sequences like "a segunda bola azul" (The second blue ball), an analysis that is typical of young children in the same task. We will also see that adults' preferential interpretation of universal-Q in BP is quite similar to children's one. A series of experiments comprising the Q-todos (all) and todo (each) conducted with 7-11 year-olds and adults reveal that both groups ascribe a not expected reading to sentences like Toda flor está num vaso (Every flower is in a vase). Collective or non-distributive interpretations seem to be preferred by adults while children exhibit a strong Q-spreading behavior (a mentioned object spreading). These results are similar to those that have been obtained by Brooks and Sekerina (2006) and are compatible with a good enough approach to language processing (Townsend & Bever, 2001; Ferreira et al., 2002). Child-like errors in adults point, therefore, to the relevance of considering methodological aspects associated to time pressure and task type when analyzing child non-adult behavior.

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Child bilingual language development
Syntax

Comprehension of wh-questions in French-speaking typically developing and language-impaired simultaneous and early sequential bilingual children

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Abstract

Complex sentences such as wh-questions have been shown to be problematic for monolingual (L1) typically developing (TD) children and children with SLI (Deevy & Leonard, 2004). To-date, little is known about how these structures are acquired in bilingual children with and without SLI with different ages of onset (AoO). It remains controversial whether early sequential bilingual children (eL2) (AoO between 1-3 years) resemble simultaneous bilingual (2L1) children or child L2 learners with a later age of onset (AoO ≥4 years) (see Unsworth, 2013). Furthermore, it is debatable whether bilingualism has a cumulative effect on SLI (e.g. see Paradis, 2010). Currently, there are no studies investigating how 2L1- and eL2- TD and SLI children comprehend complex structures such as subject and object wh-questions in French.

36 eL2-TD and -SLI French-speaking children aged 4-to-5 years old (mean: 5;4) (AoO: 3;0), 55 age-matched 2L1-TD and -SLI German-French children (mean:5;2), and 67 L1-TD and -SLI French-speaking controls (mean: 4;10) participated in a comprehension task examining non-referential 'ESK' and referential 'Quel(le)' subject and object wh-questions. The experimental structures differed in terms of canonical and non-canonical word orders. Across groups, subject wh-questions had higher accuracy than object wh-questions; ESK wh-questions had higher accuracy than 'Quel(le)' wh-questions. 2L1-TD children performed similarly to their L1-TD peers, while L2-TD children exhibited poorer performance. In the (2)L1 groups, children with SLI were outperformed by their TD peers, whereas in the eL2 group, only the 5-year-old eL2-TD children differed from the eL2-SLI children on object wh-questions. Across the language-impaired groups there was no difference on object wh-questions.

These results suggest that pre-school eL2-French children have poorer performance on the comprehension of complex sentences with non-canonical word order compared to (2)L1 children. However, both bilingual groups exhibited similar sensitivity to structural complexity. Finally, there was no additive effect of bilingualism on SLI.

First language acquisition
Pragmatics

Pragmatic flexibility and referential expressions in early Spanish

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Abstract

Pragmatic flexibility in young children can be attested though uses of the same construction with a different pragmatic goal: e.g., using the same verb with directive or assertive function; or when different expressions are used for the same goal; e.g., an imperative and an interrogative construction for the same directive intention (Cameron-Faulkner et al 2013; Ervin-Trip 1988).
Reference identification is a source of evidence on pragmatic flexibility. When reference recognition fails on a first try, children may or not use successively different referring expressions (REs). Data under analysis (three longitudinal corpus of Spanish speaking children, 24m-30m) give evidence of emergent pragmatic flexibility. Children may keep the referential goal for various conversational moves and either repeat or reformulate REs (Levinson 2006). First they do a simple replication; soon they shift indexical items and NP designations, or drop a first bare designations for elaborated descriptions. Interpretation is framed by previous work on children's reference resolution and its theoretical significance from a shared intentionality perspective, and to understand the development of the pragmatic capacity to recruit different linguistics means to solve a pragmatic goal (Matthews, Lieven & Tomasello 2007; Wittek & Tomasello 2005).
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Child bilingual language development
Morphology

The Effect of Bilingualism on Morphosyntactic Learning in Children

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Abstract

Previous work suggests that bilingualism may positively influence lexical learning in children and in adults. However, little is known about the effects of bilingualism on learning of non-lexical information. Therefore, the goal of the present study was to examine the effect of bilingualism on novel morpheme learning.
Data have been analyzed from 13 English-Spanish bilingual children (Mean Age = 6.42) and for 8 monolingual English-speaking children (Mean Age = 6.21). The two groups did not differ in non-verbal intelligence or English language knowledge as assessed by standardized measures.

The novel-morpheme learning task involved training children on a novel suffix –ku that signaled a part-whole distinction. Children were presented with a picture of the whole object and its accompanying word first, followed by a picture where the object was broken into parts and the accompanying word incorporated the word-final suffix –ku. Subsequently, they were presented with combinations of pictures and auditory labels and asked to decide whether the two matched or mismatched.
Bilingual children were found to perform significantly above chance on both testing conditions ($p < 0.05$), while monolingual children were found to perform above chance only on the mismatching testing condition. Independent-samples t-tests for accuracy revealed that bilinguals (M = 0.72, SE = 0.07) tended to outperform monolinguals (M = 0.55, SE = 0.10) in the match testing conditions. However, on the mismatch testing conditions, no significant differences between the two groups were noted, (M monolingual = 0.77, SE = 0.06; M bilingual = 0.70, SE = 0.07).
These data suggest that while monolingual children acquired only partial knowledge of the new morpheme, bilingual children acquired more complete knowledge. Thus, this study provides evidence for broad advantages associated with bilingualism for learning, and extends previous findings of bilingual advantages to morphosyntactic learning.

First language acquisition
Phonetics and phonology

The development of prosodic focus marking in Dutch and Swedish children

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Abstract

In order to flag important or new information, speakers have a range of linguistic strategies at their disposal. Many languages use prosody to mark focus, but little is known about how children acquire the adult set of focus-marking cues relevant for their language. Because children's prosodic focus marking has mainly been described for languages that lack lexical uses of pitch (2-4), we investigate the acquisition of prosodic focus marking in two languages that display different labour divisions between prosodic cues and their functions, asking how such differences affect acquisition.

We collected SVO sentences from Dutch and Swedish 4-to-5 year-olds (10 from each language) and adult controls through an interactive picture-game. 30 question-answer mini-dialogues were embedded in the game to elicit sentences with narrow focus in initial, medial, and final position, in addition to contrastive focus medially and broad focus on the whole sentence. Phonetic and phonological analyses were conducted using Praat, combining automatic and manual measures.

Mixed effect modelling was used to examine the effect of focus (focused vs. unfocused) on minimum pitch, maximum pitch, pitch range, word durations and pausing, in addition to bi/multi-nominal logistic regression modelling on accent type choices. We also analysed the children's use of prosody to distinguish between focus types (narrow, contrastive and broad).

Results from the Dutch children show that they significantly manipulate pitch and pre-target pauses to mark narrow focus both medially and finally, but they are less consistent in their use of duration and accent choice. Preliminary results from the Swedish children suggest that they, in contrast to the Dutch group, do make use of duration for marking focus. On our poster we present the complete analysis from both Dutch and Swedish-speaking children, discussing how characteristics of the children's languages affect their route to adult prosodic focus marking.

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Literacy and language
Language, general

Until the real thing comes along: development of subjunctive in L1 and L2 Spanish

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Abstract

Irrealis tenses are associated with the expression of non-real, though not necessarily unreal, events. In most Romance languages subjunctive is marked as irrealis and, hence, assumed to denote hypothetical and/or impossible situations. The indicative/subjunctive alternation in Spanish is a particular case of interaction between semantics and pragmatics that simultaneously creates syntactic effects (Ahern & Leonetti, 2004). That is, whereas indicative is assumed to be the mood of assertion or factuality, subjunctive is described as non-assertive. From a developmental perspective, mastery of subjunctive in L1 Spanish has been linked to the development of the Theory of Mind (Pérez-Leroux, 2000). In L2 Spanish, typical learning difficulties have been explained in terms of the structural complexity and/or the non-systematic distribution of subjunctive tenses (Baralo, 1999). Because fluctuation of moods is driven by government and/or speakers' selection, it generates areas of difficulty for L1 and L2 learners.

Thus, this study examined subjunctive use in the expository and narrative texts (spoken and written) produced by 80 native and 20 non-native speakers of Spanish, after watching a silent video about conflict situations at school. Native speakers belonged to four age groups (9, 12, 17 year-olds, adults), and L2 speakers were advanced and intermediate adult learners. All instances and possible contexts of use of subjunctive were identified.

Results indicate that, in both L1 and L2 Spanish, use of subjunctive was more typical of the expository genre. All groups of speakers used subjunctives to a similar extent, but differences as a function of age and language status (L1 vs. L2) were found when considering subtypes of subjunctives. We discuss how structural and pragmatic complexity interact in the acquisition of subjunctive mood in different learning contexts. Specifically, we propose that a context-specific framework may account for the development of this feature of Spanish.

First language acquisition
Morphology

The L1 Acquisition of Tense-Aspect Marking in Korean

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Abstract

It has been observed in cross-linguistic research on the acquisition of tense-aspect marking that children in early stages of development associate past-perfective marking with telic verbs, general imperfecitve marking with atelic verbs, and progressive marking with activity verbs (the Aspect Hypothesis; Bardovi-Harlig, 2000). This study investigates the early emergence and subsequent development of tense-aspect markers in Korean, -ess (past-perfective) and -ko/a iss (imperfective; progressive or resultative), verifying whether or not Korean children follow the acquisition pattern predicted by the Aspect Hypothesis, based on the longitudinal speech data of three children acquiring Korean and their caretakers.

Longitudinal data from three Korean children (Jong 1;3-3;5, Joo 1;9-3;10, Yun 2;3-3;9) were collected and analyzed. All of the data were video-recorded during caretaker-child interaction in the children's homes, taken every two weeks for 30 minutes. In total, about 81hr 15min of data were analyzed. The results indicate that in the early stages of development, the three Korean children used past marking -ess- predominantly with telic verbs, following the Aspect Hypothesis. All three caretakers also used past marking -ess- more frequently with telic verbs than with atelic verbs. This may suggest that the input in the child-directed speech influenced the distributional pattern of past marking in the children's speech. In contrast, the acquisition of imperfective markers did not follow the prediction of the Aspect Hypothesis. The children were not observed to associate progressive marking with activity verbs at the early stages of development as the Aspect Hypothesis predicted. In addition, caretaker's input did not seem to influence the children's use of the imperfective marker. The results suggest that multiple factors are at work in the L1 acquisition of tense-aspect markers, such as a usage-based learning process, a language-specific system of aspectual semantics, and individual variation, rather than a strong universal hypothesis.

Child bilingual language development
Semantics and lexicon

Development of a new tablet application for the assessment of receptive vocabulary skills in multilingual children

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Abstract

Professionals working with multilingual children struggle to identify children with language difficulties because of the unavailability of standardised assessments in many children's home languages, missing normative data on bilingual language acquisition, and a lack of language proficiency in the children's home language amongst professionals. Vocabulary plays an important role in the acquisition of other language and literacy skills (e.g., Lee, 2011) and lexical development needs monitoring for all languages a child acquires to identify those at risk of literacy and language difficulties (e.g., Conboy & Thal, 2006; Teoh, Brebner, & McCormack, 2012). Existing English language vocabulary measures are therefore often translated into other languages ignoring the cultural and linguistic differences between languages. However, the ability to administer standardised tests in the child's own language would require professionals to be fluent in a large number of languages. Tablet applications can provide a cost-effective and user friendly method to address this gap. This pilot study aimed to explore whether English and home language receptive vocabulary skills can be objectively and reliably tested with a tablet application. Furthermore the study aimed to collect pilot data on bilingual vocabulary skills. 160 children aged 5-6 years participated in the study. A tablet application was developed to efficiently assess children's receptive vocabulary (20 nouns and 20 verbs) in English, Urdu, Polish, Slovak, and Czech using a four choice picture paradigm. Target words are linguistically controlled and pre-recorded. Instructions and words are presented orally via the tablet in each language. Responses are made via the touchscreen and automatically scored. The main outcome is a multilingual screening tool which can be used by researchers and practitioners across disciplines in health and education services to assess receptive vocabulary in multilingual children. The potential for this application to link researchers and practitioners across different countries and to address theoretical and practical questions around multilingual language assessment and acquisition are discussed.

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Language development in atypical populations
Pragmatics

Article Choice in children with Autism Spectrum Disorder (ASD) and

in children with Specific Language Impairment (SLI)

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Abstract

The choice for a definite, rather than an indefinite article has been related to pragmatic knowledge such as scalar implicature (Horn, 2006).
Hypothesizing that children with ASD have deficient pragmatics, but children with G(rammatical)SLI do not, we predict wrong article choice in children with ASD, but not in children with GSLI.
We carried out an elicited-production and a felicity-judgment task on definiteness with 8 Dutch-speaking children with ASD aged 6-13, 8 Dutch-speaking children with SLI, matched on age and gender, and 8 typically developing (TD) age controls. Three conditions were tested: definite, referential indefinite and non-referential indefinite.
The results of both tasks show that all children with ASD and 4 children with SLI allow indefinite articles in definite contexts significantly more often (ASD: 20-25%; SLI: 30-35%) than the TD children (2-3%). The indefinite conditions in the production task reveal virtually no errors across groups. The indefinite condition data of the judgment task are still unanalyzed.
We propose that the children with ASD and the 4 children with SLI do not always calculate the additional (pragmatic) meaning of (in)definites derived by scalar implicature. In terms of (semantic) truth-value, the use of an indefinite article is always correct. However, Grice's (1975) (pragmatic) Maxim of Quantity dictates the (more informative) use of a definite article (stronger in the scale: <indefinite; definite >) in case of a discourse-old referent. Failure to apply the Maxim of Quantity prevents calculation of the scalar implicature, resulting in 'overuse/over-acceptance' of indefinite articles.

The other 4 children with SLI do not differ from their TD age-mates. Our results indicate that children with ASD have impaired pragmatics as does a subgroup of children with SLI. The results of the other 4 children with SLI provide evidence for the existence of a G(rammatical)SLI subgroup without pragmatic impairments.
Word count: 296

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Cognition and language development
Pragmatics

The relationship between narrative ability and executive functions in Dutch children with SLI

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Abstract

It is well-known that children with SLI experience problems in different domains of language and to varying degrees. However, in the past decades several studies have shown that these children also experience problems outside the language domain, namely in the area of central executive processes. Executive functions (EF) is the common term to denote a set of cognitive processes that control and regulate thought and action, i.e. working memory, planning, cognitive flexibility, attention control and switching, inhibition and auditory and visual attention.
Narrative tasks combine all levels of language, since children need to develop at a phonological, morphological, syntactic, semantic and pragmatic level in order to become good narrators. Moreover, the events and episodes of a story need to be ordered in a hierarchical way. In order to do this, children need to develop their EF capacities to be able to logically, temporally and causally order and relate events. Therefore the ability to tell a story in a coherent way is closely-linked to both language ability and EF.
In the current study, the relationship between EF and narrative development was examined, both in children with SLI (n = 80) and an age-matched control group (n = 80), in order to search for different profiles on the basis of EF skills and outcomes on narrative abilities. For narrative development, both a story retelling task (bus story) and a story generation task (frog story) were administered. EF was measured using subtests of the TEA-Ch and the BADS-C, WISC digit recall, nonword repetition and WMTM-C block test.
Results show that narrative skills are related to specific aspects of EF, i.e. inhibition, working memory, planning and attention control & switching.

Literacy and language
Pragmatics

Latino Preschool Children's Narrative Competencies across Contexts

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Abstract

Developing early narrative skills during the preschool years is critical, as it is predictive of a wide range of literacy skills essential for school success, including vocabulary, print knowledge, and story comprehension skills. As such, it is surprising that the existing research provides a very limited snapshot of the narrative developmental trajectories of low-income Latino children in the United States. The present study sought to address this gap in the literature by examining the narrative skills of ninety low-income Latino preschoolers (ages 3-5) across three narrative contexts. As part of a larger study, the children were visited at school, and were asked to engage in three narrative tasks in their dominant language (i.e., Spanish or English): (a) a story retelling (b) personal narrative conversations about three experiences, and (c) a wordless picture-book sharing. No time-limit was placed on any of the narrative interactions; all narratives were audio-recorded, and were later transcribed and verified using a standard system (MacWhinney, 2000). Coding and analysis are focused on comparisons of narrative length, vocabulary diversity, conversational autonomy, story grammar, and literate language across age-groups and narrative tasks. Preliminary findings suggest that children's skills vary by narrative type. Most notably, irrespective of age, children demonstrated the most sophisticated narrative skills during the book sharing task. More specifically, when sharing the books, the children were autonomous as they told an elaborative story comprised of relatively complex story grammar and literate language elements. Surprisingly, though, the children struggled with the story retelling task, and were unable to retell the stories without consistent prompting from the investigator. As a result, these narratives were very succinct, included no description beyond what the investigator had stated, and lacked in basic story grammar elements. Results are discussed in relation to the role of narrative task in shaping Latino children's storytelling competencies.

Cognition and language development
Pragmatics

Spontaneous and elicited mental state expression in fictional stories

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Abstract

Problem: Models of fictional storytelling include units of information that children and adults appear to believe are important to include in stories (Stein & Policastro, 1984). Preschool and school-age children tend to omit information that expresses characters' internal responses to story initiating events as well as their plans to achieve story goals (Hughes, McGillivray & Schmidek, 1997). In contrast, even young children will include descriptions of their own thoughts and feelings when retelling personal stories (McCabe & Rollins, 1994). Do children fail to understand the thoughts and feelings of fictional story characters? Methods: Participants were Canadian children aged 5 (n=50; mean age 5;6, SD .27) and 8 (n=49; mean age 8;6, SD .28). Children participated in a storytelling condition in which they were asked to tell a story from a set of pictures to a naïve listener and a questioning condition in which they were asked questions about the same story as they viewed the pictures. The story used for both conditions is one of the stories from a standardized storytelling tool, constructed according to story grammar principles and containing 3 initiating events. The two conditions were presented two weeks apart. Stories were scored for the inclusion of internal responses and plans. Question responses were scored for responses to 3 questions about characters' thinking, one after each initiating event ("What was X thinking?"). Responses were scored as correct if they expressed either emotional or cognitive responses to the initiating event. Results: Older children provided significantly more mental state responses across conditions than younger children. Children at both ages provided significantly more mental state responses in the questioning than the storytelling condition. Conclusion: Children appear to understand fictional characters' mental states to a greater degree than is suggested by their spontaneous inclusion of mental states when telling stories.

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Cultural and social factors in child language development
Language, general

The influences of prototypical-learning environments on child-directed speech

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Abstract

Cultural differences in parenting and language socialization can be characterized as three prototypical learning environments (Keller, 2012): (1) Subsistence-based farming families tend to foster the development of motoric skills and social knowledge to stimulate early participation in subsistence-based activities; (2) Western urban middle class families focus more on the development of cognitive skills to support children's education at school; (3) Non-Western urban, middle class families form a hybrid between the two environments with a focus on family as a social unit. We investigate to what extent these characteristics are reflected in child-directed speech.

To assess this, we analyzed child-directed speech (CDS) from natural observations of 12 Dutch, 14 urban Mozambican and 14 rural Mozambican infants at 1;1 and 1;5. We coded CDS into three categories, based on semantic content, to measure the percentage of utterances that had either a motoric, social or cognitive intention.

In absolute terms, Dutch infants are exposed to nearly twice as much CDS than urban Mozambican infants, who receive five times more CDS than infants from rural Mozambique. Looking at the percentages of each category per community, results from both ages show that rural Mozambican caregivers use significantly more motoric CDS than the urban Mozambican caregivers ($p<.05$), who in turn use more motoric speech than Dutch parents ($p<.01$). Caregivers from urban Mozambican use more social CDS than the Dutch ($p<.01$), and Dutch parents use substantially more cognitive CDS than both rural and urban Mozambican caregivers ($p<.001$).

Overall, the content of CDS follows the prototypical-learning environments of Keller: Mozambican caregivers (more so in the rural than the urban area) use relatively more motoric CDS than Dutch parents, and Dutch parents use relatively more cognitive child-directed speech than Mozambican parents. We are currently analyzing to what extent these differences are reflected in the vocabularies these infants acquire.

Cognition and language development
Semantics and lexicon

Atypical Attention Patterns Associated with Quantifier Spreading Errors in School-Age Children

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Abstract

Children are prone to quantifier-spreading errors in processing sentences containing universal quantifiers wherein they fail to restrict a quantifier like 'every' to the noun phrase it modifies. For example, in sentence-picture verification, children will incorrectly say "no" when asked to judge whether 'Every apple is in a bowl' matches a picture showing extra empty bowls along with three apples, each in a bowl. Recent research suggested that cognitive control is linked to processing such sentences (Minai et al., 2012). This eye-tracking study measured cognitive control using the Dimensional Change Card Sort (DCCS): Children with poor cognitive control (perseverative post-switch responses) were more likely to incorrectly reject pictures showing extra objects than children with good cognitive control (accurate post-switch responses). Eye-movements also distinguished children, with more eye-movements to the extra objects in children with poor comprehension. Oddly, the observed differences in eye-movements were apparent prior to sentence onset, but not during sentence processing. Our study re-examines the relationship between visual attention and sentence processing in school-age children (N=40, mean age= 8;8, sd=1;11). Three conditions were presented in a sentence-picture verification task, with eye-movements recorded from the onset of the sentence: (1) pictures with objects and containers in 1-to-1 correspondence (depicting unrelated objects as distractors); (2) pictures with objects and containers in partial 1-to-1 correspondence, requiring a "no" response, and (3) pictures with objects and containers in partial 1-to-1 correspondence, requiring a "yes" response. As a group, children showed chance performance on partial 1-to-1 sentences requiring "yes" responses. Quantifier-spreading errors were accompanied by more frequent looks to the extra objects than correct responses, with attention to extra objects persisting from sentence offset to the end of the trial. These results confirmed that errors in processing universal quantifiers are associated with atypical attention patterns, suggesting possible links between executive functioning and sentence processing.

Language development in atypical populations
Semantics and lexicon

Eye tracking studies of lexical access in children with cochlear implants: production and recognition

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Abstract

Most outcome studies of cochlear implantation in children have relied on standardized, omnibus tests of language. These instruments are designed to identify children with language impairments using endpoint measures (e.g., pointing, naming or describing pictures). Although they provide important information, they reveal nothing about the language processes that lead to those responses. We used eye tracking to obtain continuous measures of activation during lexical access.
Two parallel experiments examined various phonological and semantic cohort effects: one production and one recognition. Children saw four pictures: the target, a cohort (onset-match, offset-match---half from high density and half from low density neighborhoods; or semantic associate) and two unrelated foils. In production, the child saw the pictures and then a target border appeared—the child names that picture. Gaze data were collected through the response. In recognition, the child mouse-clicked on the target. To date, 16 children with CIs and 26 children with NH have participated (target n = 30). Two additional studies used a picture array with a target, an unrelated foil, and two cohort pictures (one onset match and one offset match); one was a production experiment and one was a recognition experiment. These experiments revealed the time course of lexical access from initial cohort activation to offset cohort activation.
Preliminary analyses indicate that children with CIs exhibit different time courses of lexical access and activation/deactivation from their NH peers. These analyses will be presented in detail and the findings will also be examined for the subject-based effects of age of implantation and standardized language and speech perception scores. MLM and growth curve analyses will be employed.
The findings suggest that children with CIs differ in their lexical access for production and recognition from their normal hearing peers. Language intervention needs to further emphasize lexical representation and organization for access.

Cognition and language development
Syntax

Emergent relationships between early infant language production and language comprehension at four years.

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Abstract

Much recent debate has focused on the extent to which children's early grammar is tied to specific verbs. We administered tests of verb specificity in the generalization of syntactic structure involving the passive construction (Akhtar & Tomasello, 1997; Brooks & Tomasello, 1999) In the context of a prospective study aimed at assessing the stability of language competence from 1 to 4 years of age, we related performance on this task to parent report vocabulary scores in the second year of life. Children with higher productive vocabularies at 17 and 18-months (as measured by the OCDI) were better able to understand, in an active construction, a verb that had been modeled previously only in the passive. No such effect was observed for verbs previously modeled in the active for which performance was near ceiling. This result seems important not only because longitudinal data encompassing both early and late childhood language indices remain relatively rare, but because it specifically connects laboratory tasks probing the verb specificity of grammatical development with standardized measures of language development probing other aspects of the language system.
Results outline
We examined the OCDI scores and experimental results of N=26, healthy, full term, normally developing children. Correlations between verb comprehension scores at four years and productive vocabulary at 17 and 18-months were carried out. Only the 17-month production scores correlated positively and significantly with the outcome variable, r=.45, p=.023. At 18-months the relationship was approaching significance, r=.35, p=.078. There were no significant correlations for comprehension of verbs previously modeled in the active form.
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Sign language acquisition and gestures
Pragmatics

How does a speaker manage the active/inactive status of a referent in discourse?

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Abstract

This study investigated how adults and children use speech and gesture to clarify whether a referent is active at a given moment in discourse. As Chafe (1987) argued, a referent that is newly introduced in a story becomes an active referent. Although the referent goes to semi-active referent as the story moves on to other topics, if the referent is mentioned again, it becomes active again. It is difficult to obtain direct evidence that a certain referent is semi-active when analyzing only spoken expression. We propose that a semi-active referent is visible in two-handed gestures in which one hand depicts/indicates an active referent, referred to in the concurrent speech, and the other hand that is held in the air indicates a semi active referent.

Participants were 10 native speakers of English; five 3-year-olds (M = 3:8) and five adults (M = 27.6) (This is a renalaysis of existing data, reported in Özyürek et al., 2008). A set of 10 video clips depicting motion even was used to elicit speech and gesture. Gestures were coded one of the three categories; both hands gesture, single hand gesture, or single hand gesture with a semi-active-referent hold (one hand is depicting or indicating the active referent while the other hand is holding in the air to indicate a semi-active referent). The proportion of the single gesture with a semi-active-referent hold was significantly higher in adults (A=20%) than in children (C=2%), $t(8) = 2.38$, $p < .05$. However, no significant different were found in the proportions of the both hand gesture (A=23%, C=33%) and the single hand gesture (A = 57%, C = 65%). Thus, 3-year-olds use semi-active referents much less frequently than adults. The results will be discussed in relation to more indirect evidence for the development of semi-active referents in speech.

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New methods in child language research
Syntax

Using eye tracking to investigate online processing of complex wh-questions in L1 acquisition of German – combining gaze data with verbal response data

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Abstract

Complex wh-questions like "Wasi sagt Emma ti trägt der Junge ti?"/"Whati says Emma ti carry the boy ti?" are a key instrument to explore how children perceive und understand the world. So far elicited imitation experiments have revealed that children produce significantly more errors with wh-questions containing long-distance (LD) movement compared to short distance (SD) movement (Grohe, Schulz & Müller 2011). To test whether the degree of movement also has a significant effect on children's online processing of complex object wh-questions this study used an eye tracking visual world paradigm. Four- and five-year-old L1 German children were presented with animated videos accompanied by auditory linguistic stimuli including LD and SD object wh-questions (e.g. "Wasi sagt Emma ti trägt der Junge ti?"/"Whati says Emma ti carries the boy ti?" vs. "Was(i) meinst du woi ist der Ball ti?"/"What(i) think you wherei is the ball ti?"). Differential looking scores (DLS) were calculated by subtracting the total looking times on the incorrect distractor objects from looking times on the correct object and dividing the difference by the sum of looking times on both correct and distracter objects (Senju, Southgate, Miura, Hasegawa, Tojo, Osanai & Csibra 2010). Children's mean DLS in the LD condition were significantly lower compared to the SD condition, i.e. children fixated the distracter objects longer than the target object. Interestingly, some children who showed correct fixation behaviour provided incorrect verbal responses indicating how visual cues interfere with children's interpretation of wh-questions. Findings shed light on the theoretical debate on the concept of syntactic movement as a determining factor in children's acquisition of wh-questions (e.g. Ambridge & Lieven 2011) and suggest which types of wh-question constructions should be used in pedagogical practice to promote children's learning.

Key words: eye tracking, first language acquisition German, complex wh-questions, syntactic movement

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New methods in child language research
Language, general

Test of Language Development (TRJ) – a comprehensive tool for child's language assessment in Polish

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Abstract

We present a construction of the first comprehensive language test for Polish,, where no standardised tools of language assessment are available, hence a pressing need for such a test. Polish has complex inflectional morphology and free word order, so adapting existing language tests constructed for English is not viable. Whereas some knowledge of diagnostic markers of SLI in children acquiring languages other than English is available (Leonard, 2000), relatively little is known about developmental language profiles of Polish-speaking children with language impairment.

Our test (TRJ), is designed for children aged 4;0-8;11. It consists of several subtests measuring core aspects of linguistic competence in both production and comprehension: (a) syntax: Sentence Repetition Task, Modeling Task (children produce a sentence based on a model provided), Sentence Comprehension Task (a picture-choice task), (b) inflectional morphology (an elicitation task), (c) lexicon (a picture-choice task, a picture-naming task), (d) discourse (simple narration task & text comprehension task). There are also supplemental tasks accompanying the test: nonce-word repetition, advanced narration tasks.

TRJ Test should be a reliable and valid assessment tool for the general population. Therefore, a large-scale national tryout study with 120 children in every half-a-year cohort was preceded by a series of pilot studies for particular sub-tasks (200 children, aged 4;0 to 10;11) and a dialectal pilot study (a total of 150 children aged 5 and 8 from three distinct regions in Poland), aimed at selecting test items not sensitive to dialectal differences. We present how outcomes of these pilot studies affected the selection of items for the final version of the test.
It is assumed that the test we are constructing for Polish may be easily adaptable to related Slavic & Baltic languages, where standard diagnostic tools are also missing.

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Cultural and social factors in child language development
Semantics and lexicon

The effects of early temperament on vocabulary development: fearful children show slower growth

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Abstract

Question: Language is an important medium of social communication, and the acquisition of language occurs in social contexts. It is thus reasonable to expect that personality traits that affect social behavior, such as temperament, could influence the course or results of language acquisition. Early temperament is also related to children's attention, which might also affect the acquisition process. Existing research has shown that children's temperament is related vocabulary size at various points during early childhood, but no available studies examined the temperament effects on the rate of vocabulary change. The present study examined this possibility by studying the effect of early temperament on the growth rates of vocabulary between the ages of 3 and 12.

Method: The effects of early temperament on vocabulary growth rates in middle childhood were examined using the data from the National Longitudinal Survey of Youth, which is based on a representative sample of the US population. Temperament ratings from children in three age groups from 1 to 5 years (N's 2168, 5654, and 6646, respectively) were used. Vocabulary was assessed using the Peabody Picture Vocabulary Test; most children received the test three times during the observed age span.

Results: Toddler and preschooler irritability and fearfulness were related vocabulary scores at 7 years in a negative manner, and positive affect and compliance in a positive manner. However, growth rates at the age of 7 were only affected by fearfulness in toddler and preschool age.

Conclusion: The results show that vocabulary development is affected by temperament in the early stages before school entry, but growth rates after the age of 7 are only susceptible to effects of fearful temperament. This shows that the mechanisms of vocabulary growth in childhood are quite robust, but fearful temperament is a risk factor for vocabulary development during school age.

First language acquisition
Semantics and lexicon

Benefit of multiple exemplars in breaking object-action interaction mapping in young verb learners

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Abstract

Three-year-olds are unwilling to extend novel verbs used to label novel actions when the object being acted on changes, appearing to map verbs onto object-action interactions (Imai et al., 2008). There is evidence that multiple, non-identical exemplars benefit verb learning (e.g. Childers, 2011). However, it is unclear whether multiple exemplars can break the object-action link. We presented three- and five-year-olds with one or two exemplar videos of novel actions involving novel objects. Children were then asked to extend the verbs used to refer to the actions to either the same action with a different object (= correct extension) or the same object with a different action. We manipulated the similarity of the multiple exemplar condition. In Experiment 1, the same actor used the same action to act on two different objects. In Experiment 2, the two exemplar videos were identical. In Experiment 3, different actors acted on different objects. Results indicated that 5-year-olds correctly extended verbs whether they originally saw one or two exemplars. Three-year-olds failed to correctly extend the novel verb when they had seen only one exemplar or two identical exemplars. But they were able to do so when they had seen two exemplar videos featuring different objects or different objects and actors. Findings suggest that multiple exemplars in which the object acted on varies are beneficial in verb learning. It allows young children to move beyond seeing the object being acted on as part of a verb's meaning, towards a more adult like understanding, namely that it is the relation between the actor and objects that constitutes the meaning of the verb. Furthermore, our findings argue against the claim of Maguire at al. (2008) that during initial verb learning less information is better.

Cognition and language development
Language, general

Books as Meaningful Contexts for Understanding Theory of Mind Concepts

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Abstract

This paper examines whether theory of mind (ToM) concepts are better understood when embedded in children's picture books than when presented as traditional theory of mind tasks that at best involve typical short stories. We expected that ToM concepts in storybooks would be easier for children to understand than traditional ToM tasks because storybooks better allow children to take the character's perspective and thus infer their mental states, including beliefs, intentions, and desires, that motivate their actions and interactions with other characters. To test this hypothesis we used three books that differed in how critical ToM concepts were to the storyline: for two of them (Harry the Dirty Dog, Henry and the Red Stripes) ToM concepts were critical but for the third book (Peter's Chair) it was not. A total of 59 low-income preschoolers (ages 4, 5, and 6) were read these three storybooks and were asked ToM-related questions. Children were also asked to complete Wellman and Liu's (2004) battery of ToM tasks as well as Astington et al.'s (2002) second-order false belief task. While these books were overall difficult for children, our hypothesis was confirmed. Collapsing across age, 20% of children were able to pass the embedded ToM when this was critical for the story, while they failed first- and second-order ToM tasks ($\chi 2 = 11.6$; $p < .05$, $\chi 2 = 17.6$; $p < .005$, respectively). For the easier book (Harry the Dirty Dog) 5- and 6-year-olds significantly understood first-order ($\chi 2 = 4$; $p < .05$, $\chi 2 = 4.5$, $p < .05$) and second-order ($\chi 2 = 5$; $p < .05$, $\chi 2 = 15$, $p < .005$) embedded ToM even when failing the ToM tasks. No such advantages were observed for the book where the ToM concept was not critical to the story. Our results have implications about the best ways to test children on these concepts.

Language development in atypical populations
Language, general

Gestational age and vocabulary growth: Comprehension and production in infants born between 30 and 42 weeks of gestation.

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Abstract

Language development is often delayed in infants born preterm (before 37 weeks gestation). Understanding the causes of language delays in preterms is complicated by multiple comorbidities and measurement choices (Wilcox, Weinberg, & Basso, 2011).We evaluated vocabulary of preterm (n = 26) and term (n = 53) infants at two chronological ages (13 and 18 months). Infants with medical complications beyond prematurity were excluded. Mothers completed the Oxford Communicative Development Inventory (OCDI, British version of the MacArthur-Bates scales, Hamilton, Plunkett, & Schafer, 2000) indicating how many of 416 words their infants were able to understand (comprehension) or understand and say (production). A repeated-measures ANOVA examining comprehension by age (13 vs. 18 months) and birth status (preterm vs. term) revealed a main effect of age, $F(1, 77) = 237.36$, $p < .001$, $\omega 2 = .76$, no birth status main effect, and no interaction. A separate repeated-measures ANOVA examining production revealed a main effect of age, $F(1, 77) = 119.04$, $p < .001$, $\omega 2 = .61$, and an interaction, $F(1, 77) = 4.46$, $p < .05$, $\omega 2 = .06$: preterm infants reportedly produced fewer words than term infants at 18 months, $F(1, 77) = 5.37$, $p < .05$, $\omega 2 = .07$, but not at 13 months, $F(1, 77) = 2.17$, $p > .05$, $\omega 2 = .03$. Treated as a continuous variable, gestational age correlated with both comprehension ($r = .27$, $p < .01$, one tailed) and production ($r = .33$, $p < .01$, one tailed) at 18 months, but not at 13 months. Prematurity in itself appears to be a risk factor for vocabulary development, even for infants born without any other medical complications. Notably, production was lower at 18 months for infants born preterm. Future studies should monitor whether this difference persists at later ages.

Child bilingual language development
Semantics and lexicon

'Moving' within and across languages: the form and function of motion verbs in the narratives of simultaneous trilingual children

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Abstract

The perception and linguistic encoding of motion, a central concept to human development, is determined by cognitive maturity as well as by distinctive language typology factors (Berman & Slobin, 1994) Cross-linguistic, developmental studies showed an effect of age and language on the type of information encoded to express motion in narratives (Hickmann, 2003). Recently, studies with bilingual adults reported a significant influence of the dominant language on expressing and remembering components of motion events (Filipović, 2011). The present study investigates the expression of motion events in 24 picture-based narratives produced by two trilingual children aged 7 and 9, speakers of Hebrew, English and Spanish. This unique case of simultaneous trilingualism provides a novel way explore the construal of motion events in space and time in an extended discourse context framed by language forms and their functions. Hebrew and Spanish express path in the verb while English expresses manner and path is encoded by particles. Moreover, only Spanish and English have grammaticized aspectual contrasts. The study analyzes motion events at the clause level in terms of path, manner, and cause of motion as well as their temporal constituency; and across clauses, in terms of the organization and distribution of motion events to encode narrative functions.

Results show a preference to lexicalize path over manner in the three languages, and a language-specific distribution of forms within the clause. With age, more information about motion is encoded by more varied means within and beyond the clause, marking distinctions between extended versus non-extended paths, expressing the phases of the motion within the episodic line and packaging motion in both temporal and causal complex packages. These findings reveal typological preferences together with integrative processes in developing the expression of motion in terms of their forms and functions in discourse.

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Language development in atypical populations
Pragmatics

Canonicity and hearer-givenness in children with SLI while processing spatial sentences

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Abstract

Spatial sentences (as e.g., (1) The monkey should be under the doll) are easier to comprehend when the reference object (RO = the doll) is known to the hearer (Hörnig et al., 2005). Non-canonical spatial sentences with a discourse-given initial RO have been shown to facilitate comprehension even more. They represent the optimal linearization as the RO precedes the new located object (= the monkey). Children with SLI typically have difficulties with non-canonical sentences (e.g., Lindner, 2003). We investigated the interplay of word order canonicity and RO hearer-givenness to disentangle whether children with SLI can overcome their comprehension difficulties associated with non-canonical sentences when the RO is visually present.

Ten German monolingual children with SLI and 25 language-matched (LM) controls were tested on spatial sentences, systematically varying word order and the correspondence of sentence and scene wrt the RO (being either displayed or not). We used a placement task and measured participants' looks to the target location in a visual world study.

Both groups accurately placed the second object according to the spatial sentence. The eye-gaze data showed that children with SLI, similarly to LM controls, looked longer to the target in canonical sentences when the RO corresponded to the object in the scene than when it did not. However, unlike the LM group, children with SLI looked less to the target location when hearing a non-canonical spatial sentence with a topicalized RO.

The results show that children with SLI benefit from ROs that are given in the visual context, similar to LM controls and adults. However, in contrast to LM controls, they do not benefit from the optimal linearization of constituents in non-canonical sentences. These results contribute to the characterization of SLI as a language-specific deficit.

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Literacy and language
Language, general

Shared narratives at home: stories, personal experiences and future accounts. Longitudinal and between situations differences

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Abstract

This research aims to longitudinally analyze and compare a series of interactive situations that can promote the development of narrative discourse (storybook reading, past and future accounts) registered in the homes of middle-income children. Previous research has primarily analyzed mother-child interaction in story-reading and past accounts situations (McCabe et al.,2008; Nelson,1996). In this research, we also analyzed future accounts, which have been less studied (Hudson,2006).
The data consists of 40 audio-recorded, induced situations of story-reading (12), past (14) and future accounts (14) registered at the homes of seven children (aged 2:6–3:6) from middle-income families. The analysis combines quantitative and qualitative methods, in order to describe the interventions of the participants that shape the discourse interactional construction, identify patterns of interaction as well as eventual longitudinal and between situations differences.
The quantitative analysis showed similarities between the situations registered at 2:6 regarding the distribution of turns, the proportion of words said by the children and their interlocutors, and the mean length of the turns (MLT). Longitudinal differences were observed: children's participation during story-reading situations increased, as well as the turns, the quantity of words, and the MLT in children and adults during the future accounts at 3:6.The qualitative analysis identified longitudinal differences. In the past accounts recorded at 3:6, the interventions of the participants focused on restoring the temporal sequence and the highpoint of the narrated events, as opposed to the exchanges at 2:6, when narratives took the format of an enumeration and description of events. During the future accounts, it was observed that at 3:6, the mothers referred to past and habitual events, anticipated particularities about the future event that they were discussing, and planned the event together with the child. The mothers at 2:6 were as contingent in the different type of situations as they were at 3:6.
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Cognition and language development
Pragmatics

Are early individual differences in pragmatic ability associated with SES and language experience?

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Abstract

It is well established that substantial variance in early lexical and grammatical development can be explained by differences in the language environment assoicated with socio-economic status (SES: Hart & Risley, 1995; Hoff, 2003). However, very little is known about whether these same environmental factors can explain individual differences in early pragmatic skills. Deficits in pragmatic skills have been shown to be strongly associated with behavioural and peer-relational problems later in life (Ketelaars, et. al. 2010; Murphy et. al 2013), and so attempting to capture early divergence and its possible predictors is of great practical importance (O'Neill, in press).

We will report a study of 150 11-month-olds and their caregivers (N= 68 dyads to date), half of whom are low SES (primary caregiver not educated to beyond 16 years, low income family). Analyses of a 30-minute free play video recording provide measues of: the infants' vocalisation and gestures (which are coded for speech act); social referencing; initiations and responses to joint attention. Analyses of a 2-day LENA audio recording provide measures of how vocal the infant was and how many turn taking episodes they were involved in. Finally, a standard test procedure provides a measure of the infants' ability to follow another's gaze. We will first assess whether these measures correlate with a variety of SES metrics including maternal education and disposable household income. Second, we will establish whether any differences in pragmatic ability are correlated with the quantity and quality of speech each child was exposed to. Measures of CDS include type and token word counts, MLU, % speech contingent on child's interests and % child communicative acts responded to.

Child bilingual language development
Phonetics and phonology

When /ba/ becomes /pa/: German-Dutch bilingual acquisition of voicing categories

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Abstract

Bilinguals have to acquire more phonological categories than monolinguals, and use the correct categories in perception and production in both languages. This task is especially intricate when their native languages use the same phonetic continuum, but divide it differently into phonological categories. Examples are phonological voicing categories that different languages space differently along the phonetic voice-onset time (VOT) continuum. Bilingual children produce voicing categories differently than monolinguals (e.g. Kehoe, Lleó & Rakow, 2004, and references therein), but bilingual adults' perception of VOT is monolingual-like (Gonzales & Lotto, 2013). To bridge the gap between the bilinguals' early non-targetlike productions and their monolingual-like end-state in perception, the current study investigates production and perception in early bilingualism.

We address simultaneous bilingual acquisition of German and Dutch, two languages with a different implementation of the voicing contrast. Both languages use the short lag VOT range, but it is 'voiceless'(as opposed to prevoiced) in Dutch and 'voiced'(as opposed to aspirated) in German. Bilingual and monolingual children (3;6 to 6;0) are tested on their production and perception of plosives in both languages. Production is elicited with memory and picture-naming games and perception is tested through categorization of synthesized VOT continua.

Pilot results with monolingual Dutch (n=10) and German (n=7) adults show clear differences in perceptual category boundaries (mean Dutch = -2ms, mean German = 17.1 ms, $F(1,15)=28.19$, $p < .001$).

The results of ongoing experiments could reveal that bilingual children have native-like perception in both languages, despite non-target-like productions. This would show an early separation of phonological categories by language. Alternatively, target-like perception could be delayed in bilinguals and develop hand-in-hand with production. The results will help us understand how bilingual children acquire the phonetics-phonology mapping in production and perception.

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Cognition and language development
Language, general

Phonological neighborhood density and phonological short-term memory in toddlers: a test of two hypotheses

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Abstract

Problem: There are two main accounts for slow lexical development in children identified as 'late talkers' (LT); a) LTs may have restricted phonological short-term memory skills, measured by a test of nonword repetition (NWR); b) LTs are unable to encode phonological forms rapidly enough to facilitate the establishment of sufficiently strong phonological representations for word production. This hypothesis was generated because LTs expressive (but not receptive) lexicons consisted of words of high phonological ND relative to those of their typically developing (TD) peers. The author proposed that the LTs were unable to say words of low ND, which restricted expressive lexical development. Given these two accounts, we measured the relationship between NWR scores and ND scores in relation to expressive lexicon size in TD and LT toddlers. The research was exploratory, with both accounts being likely outcomes.

Method: CDI data were collected from 108 TD and 19 LT children at 24-30 months of age. The children completed a NWR task (*). ND values were generated (*) for the children's expressive lexicons (for lexicons > 20 words). LTs were children with CDI scores below the 16th percentile for age.

Results: Multiple regression (stepwise) with CDI scores as the outcome variable and Age, ND and NWR as the predictor variables were conducted. For the TD children the variables accounted for 40.4% of the variance in CDI scores (Age = 23%; ND = 13%, and NWR = 5%). For the LT children, ND was the only significant predictor of CDI scores, accounting for 65% of the variance. While NWR was weakly correlated with ND in the TD children (r = -.21), it was strongly correlated in the LT group (r = -.67).

Conclusions: The underlying deficit in LTs may be poor phonological encoding abilities, rather than poor phonological short-term memory abilities.

(word count = 298 words; * = blinded)

Sign language acquisition and gestures
Language, general

Modality Effects in Development of Spatial Language: Encoding “Left-Right” & “Front-Behind” in Turkish Sign Language (TİD) and Turkish

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Abstract

To encode viewpoint-dependent spatial relations (left-right & front-behind), signers mainly employ classifier constructions where their hands represent objects in a spatial configuration and map them onto signing space in an analogue way, while speakers mostly use abstract labels available in their language. The acquisition of these spatial relations by children has been reported to be late [1, 2, 3], although these studies have been conducted with children acquiring a spoken language.

We investigate, for the first time, if and to what extent modality plays a role in the development of encoding viewpoint-dependent spatial relations. Deaf children (4-6 years & 7-9 years) acquiring TİD natively (N=20) and aged-matched hearing children acquiring Turkish (N=20) described 16 pictures depicting two objects in a "left-right" or "front-behind" type of spatial configuration and their descriptions were compared to adult descriptions in both languages.

Our results showed that adults in both languages were similar in how likely they were to encode these spatial relations of both types. However, we observed a split in the development of encoding of "left-right" and "front-behind". Both age groups of children in TİD and Turkish encoded "front-behind" as frequently as adults. As for "left-right", however, both age groups of Turkish-acquiring children specified them less frequently than Turkish-speaking adults, and mainly focused on the intrinsic properties of ground objects instead (e.g., "kalem kağıdın yanında" [the pen is 'at the side' of the paper] rather than "kalem kağıdın solunda" [pen is ‘to the left’ of the paper]). However, TİD-acquiring children were adult-like at 7-9 years unlike their Turkish-acquiring peers in encoding of "left-right".

Thus, our findings suggest that the development of spatial language can be facilitated in encoding of "left-right" relations in sign languages where mapping of space to space (i.e., sign space) might be easier than learning arbitrary labels for "left-right".

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Child bilingual language development
Language, general

Short-term language immersion: Effectiveness for balancing bilingual development

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Abstract

It is generally believed that simultaneous bilingual children are potentially provided opportunities to easily acquire dual language proficiencies from birth. Previous studies, however, have revealed that approximately one-third of these children do not achieve active bilingualism (e.g. De Houwer, 2007; Yamamoto, 2001). This study explores how much short-term language immersion can help bilingual children to develop their non-dominant language. Which skills – lexical, syntactic, communicative, and literacy – can benefit the most from short-term immersion?

A pair of Japanese-English bilingual siblings, residing in Japan (aged 5–7 and 11–13, respectively), participated in this longitudinal case study. Data in the form of narrative tasks, interviews, and literacy assessments were collected before and after the children spent three consecutive summer vacations of one-month duration, immersed in English, in Canada. The results from the narrative tasks show that even one month of language immersion can boost children's lexical and syntactic knowledge, as the children produced more complex sentences, using more diverse vocabulary, in their post-immersion narratives. Short-term immersion also helped them to reverse vocabulary attrition that had occurred in their weaker language before their summer vacations abroad. The children also demonstrated better communicative ability, particularly in terms of conversational engagement, but no changes were found in their nonverbal communication behaviors or cognitive ability. The literacy assessments indicated improvements in the children's reading – but not in their writing – ability. In fact, the children's spelling error rates increased in their post-immersion assessments. While lexical and syntactic skills in the weaker language improved greatly after short-term immersion, improvement in communicative and literacy skills were to a lesser extent. Nevertheless, clear benefits could be found for reversing language attrition and increasing language development in a weaker language through short-term immersion, thus ensuring more active bilingualism in the long run.

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First language acquisition
Syntax

Influences on optional infinitive use in German child language

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Abstract

This research investigates the hypothesis of sudden (Clahsen, 1991) versus gradual (Jordens, 1990; Blom & Wijnen, 2013) shift from optional infinitives (OI) to finiteness. Other aims are to determine if increasing use of periphrastic constructions (Jordens, 1990), adult use of infinitives and acceptable OIs influence children's OI use. More specific claims relating to parameter setting, i.e. more V2 and null subjects during initial verb fronting (Clahsen, 1991), are also examined.

Analyses are based on the extensive longitudinal spontaneous speech data of the Szagun Corpora. Data from 21 normally hearing (NH) children and 20 deaf children with cochlear-implants (CI) are used. Data points cover a period of up to two years from initial use of optional infinitives to its decrease to 5-10%. Per parent, 2000 thousand utterances were analyzed for infinitive/optional infinitive use. Child utterances were coded for optional infinitives, periphrastic constructions, finite forms. A new productivity score for finite forms was developed.

For NH children decreasing OI use is associated with increasing use of finite verbs in sentences, increasing finiteness productivity score, and increases in periphrastic constructions (Spearman's rho between -.61 and -.98, $p < .01$). For CI children, similar, but more varied relations hold, including some dissociations. In both groups adult use of acceptable OIs relates to child OI use (rho .64, $p < .001$), adult overall infinitive use only for CI children (rho .58, $p < .01$). There were no consistent overlap/non-overlap patterns between finite and infinite forms per lexical verb. Differences in finite verb placement (V2/V1) and null subjects during early and later OI stages were not found.

Results confirm the gradualness of a shift from OIs to finiteness. They also show the influence of input language and developing periphrastic constructions on children's OI use. Results argue for experience based learning rather than sudden parameter setting.

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Child bilingual language development
Language, general

What the clock activity says about the use of languages

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Abstract

What the clock activity says about the use of languages
The amount of language input and use are considered to be predictors of how a (second/foreign) language will be developed and maintained. The focus of this paper is to estimate the use of a sign language in four deaf children using a cochlear implant (CI). The means by which to estimate the language use of these children – aged 14, 12, 11, 10 years who have used a CI 13, 9, 9, 8 years respectively – is a clock activity (Satchwell 2005). The child has a picture of a clock in front of her/him, and (s)he talks about the activities of the day and what language (s)he uses with whom and at what time. The activities are marked on the clock. The second data set comes from a videotaped discussion in sign language between a deaf sign language user and each of the children as well as a discussion in a spoken language between a hearing adult and each of the children. From the video recordings the receptive and productive skills are estimated.
The results show that all the children use mostly a spoken language during the day. Only in the morning and in the evening when the CI is not on the people in their environment use signing but the children tend to speak even at those times. All the children use the spoken language at school and with their friends. Their receptive skills are noticeably better, compared to their productive skills.
In conclusion, when the active use of sign language diminishes dramatically sign language production also becomes less fluent and is closer to signed speech. The comprehension of sign language seems to remain better.
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Cognition and language development
Morphology

Estonian evidentials provide evidence that guides children's exploratory play

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Abstract

Cognition and the acquisition of evidentiality have been explored in previous studies, focusing on e.g. Turkish or Korean (e.g., Papafragou et al. 2007). This contribution targets the optional hearsay evidentials in Estonian (Uralic language). What would a child infer about the communication by the benevolent adult: that she communicates (a) the propositional content or (b) that the information lacks a source and is therefore less reliable? The study complements a recent study on Turkish (Aksu-Koç 2013).

The methods aimed at establishing if the use of the evidential leads to decreased generalization and increased willingness to accept evidence from counterexamples. Two groups of 4 and 6 year-old children participated (N=69). In the experiment, a novel property (magnetism) was attributed to novel objects ("blickets"). The first condition tested how neutral, present indicative simple sentences guide preschoolers' exploratory play with inert blickets (Plikit on magnet "A blicket is magnetic", n=36). The second condition involved a grammatical evidential (Plikit olevat magnet "They say, a blicket is magnetic", n=33). The time of play, the number of inert blickets explored, and the number of occasions of trying out the object properties were measured.

According to preliminary results, both age groups played more time, explored a larger number of blickets and tried the magnetism of the object properties significantly more persistently in the condition with the evidential. Older children explored the blickets more in both conditions, but the difference was not significant.

In summary, Estonian evidentials provide evidence for the proposition that attributes properties to novel objects. Instead of creating vigilance towards the source and the information conveyed with the hearsay evidential, which would be a possible option, the evidential guides inferences in preschoolers. More specifically, evidentials lead to increased curiosity or increased generalization, even if children encounter counterevidence.

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First language acquisition
Phonetics and phonology

The timecourse of word recognition with and without articulation

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Abstract

As children learn language, they spontaneously produce speech. Whether the physical act of articulation is essential to acquisition has been questioned. Some claim it is not necessary (Gathercole et al., 1999), while others argue for a tight link between perception and production (Keren-Pornoy et al. 2010). This work explores what impact these productions may have for the development of lexical representations.
Adult participants (n=20) were first trained on non-words with visual referents. The experiment used a within-subjects design, with a training and a test phase. During training, half of the non-words were produced by the participants and half were heard by the participants. Using eyetracking and a visual world paradigm, participants were then presented with two trained images (two produced during training or two heard during training) and asked to look at a target non-word. Timecourse analyses compared the amount of looking to the target and distractor images in 100 ms time periods after the target non-word was presented. Adults successfully learned the non-words that were both produced and heard during training, as indicated by significantly greater looking time to the target image compared to chance in both conditions. However, significant differences between the target and distractor images were found 200 ms sooner on the produced trials compared to the heard trials.
The data suggest that production predicts the speed and accuracy of how newly trained words are processed. In general, participants were faster at accessing new words that were produced during training compared to new words that were heard during training, consistent with the hypotheses that production strengthens newly formed lexical representations. We are currently collecting data from children between the ages of 4 and 5 years to determine whether similar effects of production are found on word learning in early development.

Cultural and social factors in child language development
Phonetics and phonology

Gender and age effects on the acquisition of voicing contrast in Hungarian word-initial stops: An acoustic analysis

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Abstract

Previous studies on speech sound acquisition identified some differences in accuracy between the two genders; however, findings are controversial, especially concerning the age at which differences emerge.

Fifty-five monolingual children (25 boys and 30 girls) with typical language development were sampled. The children were divided into the following 6-months age groups: 3;0+, 3;6+ and 5;6+. Data collection was based on a picture-naming task involving at least four different pictures for each word-initial p/b and t/d. The elicited data were audio-recorded, subjected to a VOT analysis, and evaluated in terms of accuracy (by considering the presence of language-specific knowledge regarding cuing with prevoicing) and the duration of VOTs for voiceless realisations.

Findings revealed a gender effect on the percentage of accurate production of the target voiced stops at the youngest age and the oldest; boys realised more target voiced segments with prevoicing than girls at age 3;0+, and the direction of the effect changed at age 5;6+. In relation to the duration of VOTs for short-lag stops, there is a difference in medians in the oldest age group with lower values (thus closer to the adult's) in the girls' speech than values in the boys' speech. Genders are similar to each other in that no impact by either the place of articulation or the voicing feature of the target stops on VOTs was found. Further differences will be discussed in the presentation, namely (1) the pattern based on the number of accurate productions per child and (2) the effect of phonetic context on VOTs.

To summarise, data presented here are in line with findings of other studies showing gender differences in the production of speech sounds; the more accurate production of girls at age 5;6+ can be explained, at least partly, by sociophonetic factors.

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First language acquisition
Semantics and lexicon

Linguistic structure affecting acquisition of spatial terms

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Abstract

Studies on the acquisition of spatial terms have shown that – contrary to the widely held beliefs of the 70's that children's first words are those directly mapping onto pre-existing concepts – the manner in which languages structure space is reflected in the manner children acquire spatial terms (see Choi & Bowerman 1991, et seq., for English and Korean). Here we are addressing a slightly different issue: whether the manner in which languages express space affects acquisition of spatial terms.

Greek uses two-word expression to denote location; the first word is followed by either one of the two (allegedly) functional Prepositions, se or apo. However, for 'on' and 'over/above' in particular the first part is the same, hence, epano apo stands for 'over' and epano se for 'on' – whereas, crucially, English uses radically different lexical items.

In an ongoing study on the acquisition of spatial terms in Greek and English, we report on the comprehension of 'on' and 'above', by three age groups of Greek-speaking children: a) 5;07-5;11, n=4, b) 5;00-5;06, n=10, c) 4;07-4;11, n=8. Correct performance of group a) was 41,7% (10/24) for above, and 83,3% (20/24) for on, for group b)18,3% (11/60) for above, and 96,7% (58/60) for on, and for group c) 41,7 (20/48) for above, and 68,7 (33/48) for on. The only mistake was (mis)interpreting each term for the other.

We believe that 'on' is indeed mastered before 'above' in Greek, (contra Terzi & Tsakali 2009), as is generally expected of terms implicating support (cf. Johnston & Slobin 1979, Gentner & Bowerman 2009). Nevertheless, the very late mastery of 'above', suggests a strong affect (of the sameness of) the first part of the locative expression. Results from more Greek-speaking children and English-speaking children tested on the same protocols will soon be available to substantiate this view.

Cultural and social factors in child language development
Language, general

Relationships between children's use of social cognition in daily life and their

language ability in the early years

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Abstract

Typically, the relationship between social cognition and early language development has been seen as the relationship between joint attention and early vocabulary, and studied within a relatively restricted period of time and a restricted environment (Tomasello & Farrar, 1986; Adamson, Bakeman & Deckner, 2004). Here we expand the view to include multiple authentic environments over a longer time frame, to answer the question: How does children's daily use of social cognitive abilities relate to their language acquisition in the early years?

Seven male children were videotaped for one hour monthly, from age 15 months to 24 months, during daily life at child care. Nineteen behaviors involving social cognition were identified and coded from the tapes. Language was assessed using the MacArthur-Bates CDI.

Looking over all ages, vocabulary was positively associated with the frequency of children's initiations of interactions (using actions and verbal means), verbal responses, and verbal interactions. Sentence complexity was positively associated with interactions and with initiations of interactions (both generally and using actions and verbal means).

Looking at specific ages, a different pattern emerges. Looking at social cognition at younger ages (16 & 18 months), vocabulary and sentence complexity were positively associated with eye contact, responding with an action, participation in spontaneous groups, and action-based interactions. At 18 months, language was also associated positively with verbal responses. In the middle ages (19-21 months) vocabulary and sentence complexity were positively associated with total social cognition, and in the oldest ages (24 months) shared understanding was positively associated with vocabulary and sentence complexity.

Children's use of social cognitive abilities in daily life is related to language acquisition in a more complex pattern than just the association of joint attention and early vocabulary. This relationship changes in its specifics, as children's ways of using social cognition and their language abilities change.

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First language acquisition
Morphology

Verb semantics and the acquisition of the English past tense

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Abstract

Verb semantics has long been associated with the acquisition of past tense marking. Adopting Vendler's (1967) aspectual categories, researchers have observed that children first mark the past tense on verbs denoting accomplishments and achievements, only gradually extending to activities and states (Bloom et.al., 1980; Shirai, 2010). However, much previous research is based on observations for only a subset of early verbs, thus it is unclear how pervasive semantic effects are. The relation between verb regularity and semantics is unclear, with conflicting results reported. Only some studies employ stringent criteria for the mapping of verbs to aspectual categories, making it difficult to ascertain what properties children are sensitive to, whilst some have questioned the adequacy of 4 aspectual verb categories, arguing for further sub-distinctions and contextual effects.
We adopted a wug-elicitation technique to test the effects of verb semantics on English children's past tense production. 193 English-speaking children (2;6-3;5) participated. 200 different verbs were elicited. Verbs were categorised according to Vendler's aspectual categories (Analysis1), and rated by 100 adults on likert scales relating to individual semantic properties (punctuality, endpoint, observable outcome, energy required, dynamic) to determine the precise aspects of meaning associated with accurate verb use (Analysis2). Mixed effects models were fitted to the data. Analysis1 revealed that for irregular verbs children's performance on achievement and activity verbs was better than on accomplishment verbs. Analysis2 provided more precise details - events which had no clear observable outcome, required little energy, or involved change over time had higher rates of accuracy. There were no semantic effects observed for regular verbs in Analysis1, but Analysis2 revealed that performance was higher for events with no clear endpoint. These results will be discussed in the context of both theoretical models of the acquisition process, and practical issues in the application of semantic categorisation criteria.
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Child bilingual language development
Language, general

Native-like vocabulary is not required for L2 speakers to repeat nonwords

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Abstract

Nonword repetition (NWR) is clinical marker of Specific Language Impairment (SLI) across many languages. Less consistent results with bilingual children (e.g. Girbau & Schwartz, 2008; Gutierrez-Clellen Simon-Cereijido, 2010) suggest that NWR performance is dependent on level of bilingual exposure and proficiency. This study examines the relationship between vocabulary and NWR scores in typically developing L1 and L2 speakers of Icelandic.

Participants were native school-age speakers of Icelandic (n= 103) and L2 speakers of Icelandic (n= 173), in three age groups: grades 1-3, grades 5-6 and grades 8-9 in Reykjavik (Iceland) public schools. Each participant was administered newly developed tests of receptive and productive Icelandic vocabulary and two Icelandic nonword tests (word-like and non word-like), previously shown to differentiate native schoolage children with and without SLI. Each nonword list has 25 items ranging in length from 1 to 5 syllables.

Results: Within each age group, L2 speakers scored significantly lower than L1 speakers in receptive (p=.000) and expressive vocabulary (p=.000). In contrast, no significant effect was found between L1 and L2 groups on NWR in any age group (word-like: p=. .680, .992, and .229 respectively from youngest to oldest, non word-like: .990, .237, and .243). L2 children's word-like NWR scores ranged only from 81.6 to 100, median 95.5, in spite of large differences in vocabulary scores (non-word-like from 72-200, median 93.6). Vocabulary scores correlated significantly with previous exposure to Icelandic (r=.298), age of arrival (r=-.255), age at first exposure (r=-.243) and chronological age (r=.366). NWR scores correlated with age, but less strongly (r=.171), and previous exposure (r=.238), but not with age of arrival (r=.403, p=.403) or age at first Icelandic exposure (r=-035, p=.685).

Conclusions: NWR performance is much less dependent on previous Icelandic exposure than vocabulary performance. Native-like vocabulary skills are not required for high NWR performance in L2 speakers.

First language acquisition
Morphology

Perceptual sensitivity to verbal inflection in young children: frequency vs. acoustic salience effects

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Abstract

It has been shown that, in production, English 3rd person singular -s is typically mastered before past tense -ed [2], perhaps due to significantly higher frequency of the former in child-directed speech. It has also been observed that children start producing syllabic allomorphs (as in wash-es) later than segmental ones (run-s) [1]. The Surface Account suggests that morphemes with longer duration are more perceptually salient, which would presumably facilitate their processing [3]. If this is the case, it should be observed in children's grammaticality judgements about a morpheme's presence.
The present study therefore aimed to: 1) examine the robustness of pre-schoolers' representations of tense morphemes in a grammaticality judgement task; and 2) observe possible allomorph effects.
Fourteen Australian English-speaking 4-year-olds (range 3;9–4;9, mean=4;2; 6 boys, 8 girls) made grammaticality judgements about twelve nonce verbs embedded in four-word grammatical vs. ungrammatical sentences (e.g. She gizes my hat vs. She giz my hat) paired with a visual scene. The targets were all CVC words ending in -z or -d, allowing us to observe differences between segmental vs. syllabic conditions (e.g. puds vs. gozes) in both tenses. The order of presentation was pseudo-randomized across participants. Answers were audio-recorded and coded off-line for correct responses.
Binary logistic regression model with tense and allomorph type as predictors showed that tense (p=0.002; OR=.47) but not allomorph type (p=0.231; OR=1.33) contributed to correct judgements. Specifically, participants were better at judging grammaticality in the present tense condition. However, there was no effect of allomorph type, suggesting that the greater acoustic saliency of the syllabic morphemes did not improve perception. These results confirm the order of acquisition found in previous studies of child speech, suggesting that simple sentence processing/grammaticality judgement tasks may provide a sensitive measure for assessing the robustness of children's developing grammatical representations.
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Sign language acquisition and gestures
Pragmatics

Signing and gesturing in deaf mother-infant`s book sharing interaction.

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Abstract

The purpose of this paper was to clarify the interaction between signing and gesturing in signed language development. We observed periodically the book sharing activities of a Japanese deaf mother and her deaf infant who was acquiring Japanese Sign Language as a first language, and described them qualitatively. The infant's age was from 4 months to 1.5 year from birth. In this presentation, the analysis was focused on how the mother-infant's referential communication developed, and how the mother 'scaffolded' her infant. The functions and forms of book sharing behaviors and communications during this period were classified into 3 types: pointing of various uses, gesturing in signing utterance ('gestural signing'), and the modification of signing. The mother pointed at the referenced objects variously, such as pointed strongly, continuously or repeatedly, pointed with the physical contact of the pictures, and pointed with the pictures outlined by the fingertip, which all were assumed to control the infant's attention, some promoting to obtain and maintain the infant's attention toward the objects, and some facilitating infant's own responses. It was also observed that the mother often expressed signs in an iconic way, or 'gesturally', for example, when she signed ELEFANT, originally moving the one arm with a fist side by side, she moved her arm as though it were really an elephant's nose moving extensively and sometimes tickled her infant with the assumed nose. The mouthing movements and facial expressions were also observed to be 'gestural,' such as mouthed 'wan-wan' when signed DOG. The third one was 'motherese' register of signing, including the modification of the place of signing, such as signing on the book or on infant's body, which promoted to attend both to mother's signing and objects referenced. Finally we discussed the indispensable nature of gesturing in the acquisition of a signed language.

First language acquisition
Syntax

Children acquiring Spanish as a first language have difficulties in predicates with telicity markers

Torrens,

Abstract

It is well known that telicity is a property of accomplishment verbs with a direct object (Krifka, 1998). Tense has also a clear effect and the present perfect is usually part of telic predicates. In this paper we present empirical research on the acquisition of Spanish operator clitics which are argued to be telicity markers.

Van Hout (1998, 2007) shows that English children acquire telicity particles in sentences very early. We present an empirical study based on a truth-judgment-value task in order to find out whether Spanish children are able to acquire the Spanish equivalent telicity markers in examples like at a similar age. The results of our study in (1) clearly indicate that this is not the case. Moreover, we show that Spanish children from 3 to 6 have more difficulty with predicates with telicity markers than with predicates without them. Hodgson (2002) on the basis of similar results has claimed that clitics are challenging in language acquisition since they behave partly like independent words and partly like affixes. Likewise, the main difference between English particle and the clitic operator may be argued to be due to the fact that only the latter attaches phonologically to a host.

We propose that telic clitics move to check their operator feature. In this way we can finally explain the statistically significant difference ($p < 0.001$) in the acquisition of telic predicates with and without aspectual clitics in our experiment, suggesting that "move" requires time to be acquired since it is a less economical operation than merge, which falls within the minimalist guidelines (Chomsky 1995, 1998). Our analysis can also account for Van Hout's (2003) results that in Slavic languages that exhibit telicity affixes children don't have any difficulty with the acquisition of telicity since unlike clitics, affixes merge with the predicate and don't move.

Results

1) Correct responses

	Telic predicates with "se"	Telic predicates without "se"
Picture Items	7, 8, 10	11, 12, 15
Total percentage	64.47%	96.5 %

Quantitative and qualitative input factors
Phonetics and phonology

The effect of vocalic vs. consonantal phonetic structure on language segmentability: the case of Danish

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Abstract

Previous research has shown that Danish children's development of comprehension skills is slower than a range of other languages. Low segmentability of Danish, due to its phonetic structure rich in vocoids and long vocalic stretches, has been suggested as a possible cause (Grønnum, 2003; Gooskens et al. 2010). In this experiment, we investigated the hypothesis that languages with a high number of vocoids in the output are in fact harder to segment than ones with less vocalic sound structures. Adult subjects from different language backgrounds (N=25 Danish; N=19 American English; N=19 Finnish) were tested on their ability to recognize words from an artificial language they had previously been familiarized with. Two distinct languages were created: a contoid-language, consisting of both contoids and vocoids, and a vocoid-language, consisting exclusively of vocoids. Both languages were made up of bi/trisyllabic nonsense words presented in a continuous speech flow without stress, intonation or coarticulation cues, but which incorporate transitional probabilities (as in e.g. Saffran et al., 1996). Participants were randomly assigned to either of the two language conditions. All subgroups but one (Finnish, vocoid) scored significantly above chance level. The results reveal a general trend whereby American and Finnish subjects perform better in the contoid-condition (although the difference is not statistically significant, probably due to the small sample size). This evidence supports the hypothesis that languages with a largely vocalic sound structure—like Danish—might be harder to segment. However, the general trend is reversed in the Danish sample, with better performance on the vocoid-language. This asymmetry in the performance of Danish subjects might suggest that: (1) adults whose native languages have more vocalic phonetic structures might develop a unique sensitivity to vocoids over contoids; (2) the bias for consonantal over vocalic information processing (e.g. Nazzi et al. 2009) might be language-specific rather than universal.

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Cultural and social factors in child language development
Language, general

A parent-implemented language intervention in lower socioeconomic status populations

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Abstract

The present study explored the effects of parent-implemented language intervention on the language skills of children and parent outcomes in lower socioeconomic status populations. The results of the meta-analysis of Roberts and Kaiser (2011) indicated that these interventions improve language development of children. However, the validity of these results is limited because the socioeconomic status for the majority of the study participants was middle class. It is unclear whether the positive results of the parent-implemented language interventions would generalize to parents and children from a lower socioeconomic status.

Twenty-five typically developing children were recruited in the French-speaking part of Belgium (Mean age : 24 months, Range : 18-30 months). Socioeconomic status is based on the level of education and occupation status of both parents. The study utilized a pretest-posttest design and parent-child dyads were randomly allocated to experimental group (parent-implemented language intervention) or control group (psychomotor training). Participants received between 10 and 15 weekly 1-hr sessions for 3 months. The language intervention included the presentation of specific language intervention strategies, role plays, focused discussions, learning of nursery rhyme and shared reading. Pretesting and posttesting included videotaped parent-child interactions during a freeplay session, language inventories, cognitive and psychomotor assessments. Spontaneous language samples during freeplay were analyzed transcribed with CHILDES.

The results revealed that parents who received parent language training used more language models than parents from the psychomotor training. Moreover, positive and significant effects were observed on language skills (number of words), expressive phonology (phonemic inventory) and expressive morphosyntax (mean of length utterance) in experimental children when compared to control children.

The implications of these results emphasized the role of parent-implemented language intervention also in lower socioeconomic status populations.

Roberts, M. Y., & Kaiser, A. (2011). The effectiveness of parent-implemented language interventions: A meta-analysis. American Journal of Speech-Language Pathology, 20(3), 180-199.

First language acquisition
Phonetics and phonology

The effects of emotional prosody on developing the native lexical tone perception in 7-11 month-old infants

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Abstract

Lexical tone perception undergoes rapid a great change between 4 and 12 months of age (Yeung et al., 2013). Emotional prosody affects infants' listening preference between adult-directed speech (ADS) and infant-directed speech (IDS) (Singh et al., 2002) and fundamental frequency (F0) is the acoustic cue for both emotional prosody and lexical tones of Mandarin Chinese. The goal of this study is to assess effects of emotional prosody on lexical tone perception in Mandarin-learning infants.

Methods. In the Experiment 1, we analyzed the acoustic features of lexical tones with happy and neutral prosody in ADS and IDS. Participants were 46 7- and 11-month-old infant-mother dyads and 8 bisyllabic words (= 4 lexical tones x 2 emotional prosody) as the speech materials. Results show that F0 is higher in IDS than ADS ($p < .001$), is higher in happy prosody than neutral prosody ($p = .026$), and varies with lexical tones ($p < .001$). In addition, the emotional prosody and speech style interaction is not significant, ($p > .1$).

In the Experiment 2, 7- (n = 80) and 11-month-old (n= 78) Mandarin-learning infants were tested with the conditioned head-turn (HT) procedure on the discrimination of Tone 1 /xi1/ vs. Tone 3 /xi3/ contrast. Stimulus pairs were: Tone 3 – Happy (T3-H) vs. Tone 1 – Neutral (T1-N), Tone 3 – Neutral (T3-N) vs. Tone 1 - Neutral (T1-N), and Tone 3 – Happy (T3-H) vs. Tone 1 Happy (T1-H). Results show that older infants perform better than younger infants in T3-H vs. T1-N pair ($p < .05$) and the age effect is not significant for other two pairs ($p > .1$).

Conclusion. Despite of larger acoustic difference in T3-N vs. T1-N pair than T3-H vs. T1-N pair, results suggest that incongruent emotional prosody in speech provides extra information to facilitate lexical tone perception development.

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Literacy and language
Language, general

Core Academic Language Skills (CALS): An operational construct for exploring variability in adolescents' school-relevant language development

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Abstract

Academic language (AL), or the language of school, refers to a constellation of prevalent language forms and functions that co-occur with learning-related tasks in the social contexts of school (Bailey, 2007; Schleppegrell, 2012). Despite a longstanding awareness of AL as a developmental and pedagogically-relevant research area, the construct of AL proficiency -- understood as a more comprehensive set of skills than just academic vocabulary-- has remained only vaguely specified (National Research Council, 2010). This study proposes a new operational construct, core AL skill (CALS) and represents an innovative attempt at identifying levels of CALS proficiency in English-speaking pre-adolescent students. In contrast to disciplinary AL, CALS is defined as knowledge and effective deployment of language forms and functions prevalent in school texts and tasks across content areas. Informed by research in textual and developmental linguistics (Halliday, 2004; Berman & Ravid, 2009), the proposed CALS construct includes skill in decomposing morphologically-derived words, understanding complex syntax, resolving conceptual anaphor, using logical connectives, and organizing expository texts, among others. Using the Core Academic Language Instrument (CALS-I)--a theoretically-grounded and psychometrically-robust researcher-developed measure--, this study explores levels of CALS proficiency in a sample of 353 students from an urban public U.S. school. Using Rasch IRT analysis, we obtained individual item difficulty estimates for each CALS-I item, ranked all items, and generated factor scores to estimate students' CALS. On the basis of an analysis guided by item-level empirical data and language development theory, four CALS performance levels were established. CALS scores demonstrated an increasing progression across grades. However, when disaggregated into performance levels, results revealed considerable variability within grades. Results document the substantial within-grade variability in CALS that can be found among English-speaking pre-adolescents and highlight the need for longitudinal and cross-linguistic research to explore developmental trajectories in students' school-relevant language skills.

First language acquisition
Morphology

The Acquisition of Evidentiality

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Abstract

In Turkish, for all past events, two evidential verbal affixes differentiate direct sources (e.g., perception) from indirect sources (e.g., hearsay/inference). In Turkish and other languages with grammaticalized evidentials, full semantic and pragmatic understanding of evidentiality comes only at the end of the preschool years or even later (Aksu-Koc, 1988; Fitneva, 2009; de Villiers, Garfield, Gernet-Girard, Roeper, & Speas, 2009). However, prior tasks have typically used distinct tasks to measure production of different evidential morphemes and comprehension of evidentiality morphemes. Here, we use parallel tasks to evaluate children's flexibility in production and comprehension.

Three-year-old (n=33), four-year-old (n=33), and six-year-old (n=32) Turkish-learners received either a production or a comprehension task. Stimuli were events in which a puppet performed actions in a puppet theater (e.g., inflating a balloon). For Perceived Events, the theater's curtains were open throughout the event, so that the event was witnessed. For Inferred Events, the curtains were open for the beginning and the end, but not for the midpoint, of the event, so that the event was inferred. In the production task, children observed and described the events. In the comprehension task, children and the experimenter watched videos of Perceived and Inferred versions of each event, presented side by side. The experimenter described the event with the direct (-DI) or indirect past tense (-MIS) morphemes, and asked children to find the video that she was talking about. In production, children correctly used -DI for Perceived Events, and -MIS for Inferred Events ($F(1,33)=132.20, p<.001$) even at age 3. However, in comprehension, performance rose above chance level only at age 6.

Our results lower prior estimates of evidential production in Turkish. However, they show that, contrary to what is typically observed in language acquisition, successful evidential comprehension lags behind production. We suggest this asymmetry is explained by the difference between accessing one's own vs. others' knowledge sources inherent in production vs. comprehension of evidentials.

Child bilingual language development
Language, general

Amount of exposure as a proxy for dominance in bilingual language acquisition

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Abstract

Bilingual children are typically more proficient, or dominant, in one of their two languages. In any accurate assessment of their linguistic abilities, it is important that such differential capabilities are taken into account, whether for the purposes of assessing bilingual children in comparison with monolinguals, contrasting the linguistic development of different bilingual groups, or examining possible bilingual language outcomes. One of the problems facing both researchers and language professionals alike is how to operationalise dominance in an effective yet efficient manner (Cantone et al. 2008; Kupisch, 2004). Usually, a sample of the child's productions is analysed using one or more performance-based measures such as MLU; alternatively, experiential variables such as relative amount of exposure are employed (Foroodi-Nejad & Paradis, 2009). This small-scale study explores the extent to which children's language experience and their absolute and relative language proficiency, or dominance, are related, with a view to determining whether measures of language experience should be used as indicators of language dominance in studies of bilingual language acquisition.

Data from 18 simultaneous English/Dutch bilingual children aged 2 to 4 were used to calculate differential scores (following Yip & Matthews 2006) for MLU, number of different types of verbs/nouns and vocabulary (PPVT); language use/background information was collected using parental report. A strong relationship was found between children's absolute and relative proficiency and certain experiential variables, namely the extent to which children were exposed to English, the extent to which they spoke English at home, and the number of exclusively English-speaking conversational partners at home. Furthermore, amount of exposure was significantly different for Dutch-dominant vs. balanced children (min. 65% vs. less, respectively).

These findings suggest that amount of exposure is a valid means of operationalizing language dominance and may have potential as a proxy for language dominance in future studies on bilingual language development.

Literacy and language
Pragmatics

Narrative and Linguistic Competence of Arabic-Speaking Kindergarten Children

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Abstract

Introduction: Arabic is a diglossic language with two distinct varieties: Modern Standard Arabic (MSA) - the variety of literacy and education, acquired through formal instruction, and the Spoken Arabic Vernacular (SAV) - the colloquial variety of home and daily conversation (Maamouri, 1998). This duality poses a significant challenge for Arabic-speaking children in acquiring MAS, rendring literacy an overly arduous process (Saiegh-Haddad, 2003, 2007). The present study examines Arabic-speaking kindergarteners' awareness to diglossia in their language prior to the formal study of Arabic and explores the interrelationship between particular linguistic forms and narrative discourse functions.
Method: 38 kindergarten children, native speakers of Palestinian Arabic, participated in the study. They told a story twice: (1) by-heart and (2) by dictating the story to an interviewer. The wordless picture book "Frog, where are you?" was used to elicit the narratives. The participants were instructed to narrate the story using MSA. 78 stories were obtained - transcribed and coded using CHILDES. A qualitative analysis was performed based on structural and linguistic schemes.
Findings: Data analysis reveals: 1) Complete use of MSA among 13% of the participants in the spoken narrative and 29% in the dictated one. 2) Flexibility in switching between the two variations while integrating particular features of MSA in the spoken narrative; 3) Distinctive use of MAS and SAV as reflected in differential use of narrative structure; 3) intelligent use of MAS to emphasize discourse functions, e.g., highlighting the problem in the story.
Conclusions: The study suggests that children are aware of the diglossia in their language from early on and that the process of MSA acquisition starts well before schooling. This has implications for educational practice and literacy in early childhood (e.g., exposure of preschool children to different genres of text to establish standard linguistic knowledge and literacy skills before school-age).

First language acquisition
Phonetics and phonology

Embodiment in Early Perception? Dorsal and Coronal patterns in English and Dutch

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Abstract

Embodiment perspectives on language acquisition have gained attention in recent years (e.g. MacWhinney, 2013), but have so far mostly focused on speech production. In contrast, we investigate evidence for perceptual advantages for consonant patterns in early words that correspond to reported prevalent patterns in early production. From an embodiment perspective, these patterns, attested across various languages, should be language-general being based on universal motor factors. At a later stage, however, perception could also reflect language-specific phonological learning.
We tested word recognition in 48 English and Dutch toddlers (24-26 m.o.): English and Dutch are similar in many respects, but show important differences in patterns of CV-co-occurrences in babbling and first words as well as in Child-Directed-Speech; moreover, English but not Dutch children frequently show dorsal consonant harmony ('goggy' for 'doggy'). Children participated in a mispronunciation detection task (Swingley & Aslin, 2000). Participants heard familiar dorsal- and coronal-initial words that were pronounced either correctly, or with a mispronunciation of word-initial place of articulation. Words in both languages contained universally more 'preferred' versus 'non-preferred' CV combinations. By mispronouncing the initial consonant, target words changed from having a preferred to a non-preferred structure, or vice versa.
From an embodiment perspective, English and Dutch children are predicted behave similarly in detecting mispronunciations, regardless of the exact language-specific input patterns; however, from a phonological perspective based on early production and input patterns, representations of dorsal-coronal contrasts are considered different in English versus Dutch, and Dutch children may be better at detecting mispronunciations of dorsals. The results shows that Dutch toddlers detected mispronunciations of all types of words, with no evidence for better perception of (non)preferred structures in words, which matches the phonological hypothesis. We will compare the Dutch patterns with data from English-learning children (data collection completed, analyses ongoing).

First language acquisition
Semantics and lexicon

Children's Interpretation of Distributive Universal Quantification:

Explaining Non-targetlike Response Patterns

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Abstract

Most research on children's interpretation of universal quantification has focused on Exhaustive Pairing (Inhelder and Piaget, 1964; Philip, 1995; among others). This phenomenon seems to occur irrespective of which type of universal quantifier is presented (Philip, 1995; among others). As a result, most accounts which have related exhaustive pairing to properties of universal quantification, have assumed that children interpret all universal quantifiers in the same way. However, in this paper we will show, based on research into a less-studied construction, that in fact children distinguish between distributive universal quantifiers and collective universal quantifiers.

Su (2001) showed that when preschool children were presented with double-object constructions like (1) they showed a non-targetlike performance pattern.

(1) Snow white gave a lady every flower.

That is, they rejected the test sentence when a certain lady got every flower, but accepted it when every flower was given to a different lady. We will name this response pattern, which is the opposite of the adult response pattern, the Reverse-pattern. We hypothesized that this non-targetlike performance pattern could be due to the type of universal quantifier that was presented.

To test this prediction, a group of 30 Dutch-speaking preschool children (mean age 5;5) was presented with sentences (1) in a Truth-Value Judgment task. Children were presented with both collective and distributive universal quantifiers in different event-types. The results show that children do differentiate between different (types of) universal quantifiers. The results of the study lead us to propose an account which relies on prototypical interpretations of distributive universal quantifiers, and the problems which arise when contexts do not match these prototypical interpretations. We will argue that this not only sheds light on why the Reverse-pattern occurs, but also on the occurrence of Exhaustive Pairing.

Cultural and social factors in child language development
Language, general

The academic talk register: A critical preschool oral language foundation for later reading comprehension

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Abstract

It is proposed that we extend a new way of conceiving of oral language skills to the preschool level, a perspective long considered with school-aged children. The goal of this recommended shift in current thinking is to foster a better understanding of the wide array of co-occurring language features that provide important foundations to later reading comprehension and classroom success more generally. Two preschool oral language registers are proposed – one used primarily for the purposes of carrying out everyday affairs labeled casual talk (CT), and one used primarily for transmitting, acquiring, and displaying knowledge labeled academic talk (AT). Research and scholarship from a variety of disciplines is synthesized and organized to suggest three broad categories of language features (conceptual, linguistic, & social-interactive), each containing many dimensions and sub-dimensions. The two registers are distinguished by the relative prevalence of each dimension or sub-dimension (e.g., relying on more or less physical contextual support). Future research is needed to determine which co-occurring aspects of language are most important to defining CT and AT use by and with preschoolers. Finally, a number of bodies of research are consulted to support the claim that preschoolers whose mothers have higher education levels are exposed to a combination of CT and AT in their homes during both daily living and more literate activities. These children arrive at preschool familiar with AT. In contrast, children whose mothers have lower education levels are primarily exposed to and hence learn only the CT register at home. They arrive at school much less familiar with the AT register, and are typically not explicitly taught how to use the register. This happens because their teachers are not aware of CT and AT distinctions, nor are they aware that many children with perfectly adequate CT may lack familiarity with the AT register.

First language acquisition
Syntax

On the (impaired) acquisition of the mass-count distinction in Dutch

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Abstract

This study explores the acquisition of the mass-count distinction (flour/*flours vs. pencil/pencils) in Dutch. We argue that the later acquisition than English-speaking children, but the earlier acquisition than Hebrew-speaking children is due to cross-linguistic differences between the available mass-count distinguishing cues in the input.

While Barner and Snedeker (2005) show that English 4-year-olds clearly distinguish mass from count nouns, Hebrew-speaking children examined by Hacohen (2010) show some sensitivity to the distinction only around age 8, and are not adultlike even by age 17. These results are explained by the higher number of syntactic cues distinguishing mass from count nouns in English, such as special quantifiers (much/many, little/few, etc.), and indefinite articles.

Hypothesizing that Dutch offers more syntactic cues encoding the mass-count distinction than Hebrew (indefinite article), but fewer than English (no special quantifiers), we predict that Dutch-speaking children acquire the mass-count distinction later than English-speaking children, but earlier than Hebrew-speaking children.

Using Barner & Snedeker's (2005) quantity judgment task we tested 90 Dutch-acquiring children aged 4;1–12;6, and 10 adult controls. The participants had to answer Who has more X? by picking one out of two pictures. We examined five different noun-types, corresponding to five conditions: count ('pencils'), substance mass ('flour'), object mass ('cutlery'), flexible (mass: 'rope'/count: 'ropes').

The results in Figure 1 show that adults virtually always base their judgments on number in the (flexible) count and object mass conditions, but hardly ever in the substance and flexible mass conditions, showing a clear mass-count distinction. The children's results confirm our prediction: adultlike performance on most conditions is achieved around age 8, except for the flexible mass condition ('rope'), where even the oldest children (10;0-12;6) do not perform completely adultlike. This supports the hypothesis that the number of syntactic cues for the mass-count distinction in the input matters to acquisition.

Word count: 300

Link to figure 1: https://www.dropbox.com/s/qvkcfwgd61njqfj/grafiek%20abstract.jpg

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Language development in atypical populations
Language, general

Do children with different degrees of hearing get different input?

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Abstract

RESEARCH QUESTIONS: Children's degree of hearing appears to affect parent-child interaction. For instance, mothers of deaf children address significantly less speech to their children than mothers of normally hearing (NH) children (Lederberg & Everhart 1998). Does this observation also hold for congenitally deaf children with a cochlear implant (CI)? In other words, do parents of CI children interact less with their children or, conversely, do they interact more with their children, thus showing an awareness of their children's changed hearing and compensating for their children's hearing loss by giving them more linguistic input?

METHOD: Two corpora were analyzed: (1) a longitudinal corpus of 10 early implanted CI children interacting with their parents. The corpus consists of video-recordings lasting between 50 and 100 minutes, and spans the period from the activation of the CI device up to 30 months post-implant. (2) A longitudinal corpus of 30 NH children, followed between 6 and 24 months of age.

Quantitative analysis: The parents' and the children's speech were analyzed in terms of the number of utterances per time unit, utterance duration, and speech rate.

Qualitative analysis: The transcriptions were coded on two layers: (1) Do parents react to their children's utterances? and (2) Do parents incorporate (part of) their children's utterance in their reaction?

RESULTS: Parents of CI children address more speech to their children (more utterances per time unit), but their utterances tend to be shorter. Speech rate develops in a similar way for both groups.

Parents of CI children respond more frequently to their children's utterances in both the prelexical and the lexical period. They also incorporate their children's previous utterances more often than parents of NH children, but this is only significant in the lexical stage.

CONCLUSION: Children's degree of hearing affects child-directed speech (as well as their own speech).

Word count: 300

Reference

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First language acquisition
Semantics and lexicon

What does the Finnish Short Form Version of the CDI tell about Early Lexical Development in Finnish Children?

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Abstract

Background and aims of the Study: There is lack of screening tools designed for screening specifically lexical development in children who are acquiring Finnish as their native language. The aims of this study were 1) to analyze what kind of information the Finnish short form version of the Communicative Development Inventory (FinCDI-SF) provides on early lexical development in Finnish children at 0;9, 1;0 and 1;3, and 2) to study the relation between the FinCDI-SF and the Finnish long form version of the CDI (FinCDI-LF, Words and gestures form) at 1;0 in normally developing Finnish children. The present study is a part of the norming study of the Finnish short form version of the CDI.
Methods: Participants were 78 healthy, full-term children growing in Finnish speaking families. The methods were the FinCDI-SF (used at 0;9, 1;0 and 1;3) and the FinCDI-LF (used at 1;0). The FinCDI-SF was translated and adapted to Finnish for the needs of the present study before data collection. Lexicon size and composition were measured separately for both comprehensive and expressive vocabulary.
Results and Conclusions: The lexicon size multiplied in both comprehensive (at 0;9: mean 7, (SD 6); 1;0: 23 (13); 1;3: 48 (16) words) and expressive (at 0;9: 1 (2); 1;0: 3 (3); 1;3: 9 (9) words) lexicons as a function of time measured with the FinCDI-SF. In both lexicons, the percentage of social terms decreased, whereas the percentage of nouns and verbs increased as a function of time. The FinCDI-SF and the FinCDI-SF provided parallel information on lexicon size ($r = .89$ for comprehensive and $r = .86$ for expressive, both $p < .01$) at 1;0. This study provides new and promising information on the functionality of the FinCDI-SF as a tool for assessing early lexical development.

Quantitative and qualitative input factors
Language, general

Relationships between language activities at home and language development in Dutch-speaking two- and three-year-olds

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Abstract

Purpose: This study investigates how language activities at home such as book reading and storytelling relate to children's development of specific language skills. Previous research has shown associations between the amount of language exposure at home and vocabulary and grammar learning (Hoff, 2006; Huttenlocher et al. 2010) as well as effects of conversational settings on children's language use (Hoff, 2010). In this study, we investigate how mothers' use of specific language activities relates to children's development of grammar, vocabulary, and phonological memory.
Method: 41 Dutch-speaking two-year olds and 40 three-year olds completed a grammar production task assessing verb inflection, a receptive vocabulary task, and a nonword repetition task. Input data were collected through a detailed questionnaire assessing mothers' use of a number of language activities: informal conversation, storytelling, book reading, and educational talk (e.g., naming colors).
Results: Positive and significant correlations were found between the total amount of language activities and all three language skills that remained after age was controlled. A comparison between the two age groups showed that correlations were strongest in the two-year olds. In these children, educational talk correlated most strongly with receptive vocabulary ($r = .48$). Storytelling and book reading correlated most strongly with nonword repetition (rs .30-.50). Correlations with children's production of verb inflection were not significant. Hierarchical regression analyses showed that storytelling and book reading explained a significant amount of variance in nonword repetition scores, above and beyond vocabulary (storytelling: 13%, book reading: 19%).
Conclusion: These results show that maternal language input through specific language activities, as assessed through questionnaires, is significantly associated with the development of specific language skills, especially at two years. These associations do not only hold for vocabulary, but also for phonological memory, even if differences in vocabulary are controlled. Implications of these findings are discussed.

Quantitative and qualitative input factors
Language, general

Comparison of Linguistic Input in British Mothers' and American Mothers' Infant-Directed Speech

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Abstract

Previous studies have observed that lexical development and segmentation abilities in British children are different from those of American children. One possible reason for these differences is the form of infant-directed speech (IDS) used in each country. To investigate this we audio-recorded infant-mother dyads from American families in the Shenandoah Valley (Virginia) and British families in North Yorkshire (England). The 8-month-old infants had no near-age siblings, and each had at least one parent with the equivalent of a four-year college degree. An hour of each family's audio-recording was transcribed using ELAN transcription software. The preliminary analysis examined the transcriptions of four British and four American mothers' IDS to determine differences in the following: number of words, number of utterances, number of word repetitions, number of utterance repetitions, number of different words repeated, MLU in words, and number of isolated words. Although in this preliminary data the seven measures did not differ significantly across cultures, the American IDS had larger numbers of words, utterances, word repetitions, utterance repetitions, different words repeated, and words in isolation. In addition, American IDS had a smaller MLU than British IDS. Most of the measures had moderate to large effect sizes ($d = 0.52$ for number of words, $d = 0.90$ for number of utterances, $d = 0.97$ for word repetitions, $d = 1.18$ for utterance repetitions, $d = 1.12$ for isolated words, and $d = 1.01$ for number of different words repeated). With a larger number of participants a significant difference is likely to emerge between the two groups. Research is underway in investigating these potential differences with a larger sample. By the time of the conference we plan to have analyzed seven American and nine British mothers' transcripts.

Cognition and language development
Syntax

On the role of complement clauses in the development of Theory of Mind

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Abstract

This research is concerned with the mastery of complement sentences in the development of the late states of Theory of Mind (ToM). The ability to ascribe false value to complement clauses of verbs of belief (CC) has been considered to be fundamental to the achievement of those states (cf. de Villiers & de Villiers, 2009). The distinct values assumed by PoV (Point-of-view), a formal feature represented in CPs, in complex sentences with a CC expressing a false proposition would signal to the child the possibility of different individuals having different states of mind, thereby making it explicit and sustaining false belief (FB) reasoning. In the present research, this hypothesis is scrutinized. The circularity of the hypothesis centered on PoV – a feature to be semantically interpreted – is pointed out. It is further argued that the possibility of PoV assuming different values in main and complement clauses does not hold, as pronominal and deictic reference in CCs reveals. An experiment is reported in which children's ability to ascribe different truth values to main and complement clauses is assessed. Twelve 3-4 year-olds participated in a storytelling activity. Twelve cartoon-like stories containing CCs were presented. Children were asked two comprehension questions regarding the truth-values of the main and the CCs in four experimental conditions (true/true; true/false; false/true; false/false). The dependent variables were the number of correct responses to those questions. The results show that children successfully attribute correct truth-values to CCs, although they may fail to reconcile distinct truth-values in the complex sentence The acquisition of verbs of belief and evidence provided by counter factual information seem to suffice for language to play a role in the development of ToM. CCs expressing FBs may help to make a FB explicit. There is, however, no role for PoV in this process.

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First language acquisition
Morphology

Derivation bootstraps inflection in the L1 acquisition of Russian and Lithuanian

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Abstract

The nominal system of Lithuanian and Russian, although archaic and complex, is acquired early by children due to a rich and well-organized input (Kempe, Brooks, Gillis 2007). Even though the nominal system of Lithuanian is more complex, phonologically it is more transparent (unlike in Russian, there is no phonological reduction of the inflectional endings). According to our hypothesis, the early use of derivational suffixes triggers the acquisition of inflectional endings thus helping children to proceed from the first contrasts to real miniparadigms and to acquire the first unproductive inflectional patterns (Dressler 2011).

Longitudinal corpus data of 4 native-speaking Lithuanian (age: 1;6-3;5) and 4 native-speaking Russian (age: 1;4-3;5) children were analyzed using the CLAN programs to establish whether the acquisition of derivational suffixes triggers the acquisition of nominal inflection.

It was observed that case and number oppositions in subjects emerge 2-3 months after the onset of their speech production. The first contrasting forms occur in elementary stems. At the same time children begin using derivative suffixes, e.g. diminutive ones. From that point on the number of inflectional contrasts increases significantly. In Lithuanian, the variety of derivational suffixes is higher than in Russian and the speed of paradigm formation in most Lithuanian subjects is significantly higher. In the course of language development individual parental strategies, interacting with the typological features of respective languages, result in individual variations.

Typological differences predict earlier occurrence of morphological contrasts in Lithuanian children. Despite the fact that some Russian subjects demonstrated a very early use of inflectional contrasts, they were slower in the development of true miniparadigms. These results complement findings from several Slavic languages (Serbian and Polish) that diminutives constitute a salient cluster of word forms which may facilitate learning of noun morphology.

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Sign language acquisition and gestures
Semantics and lexicon

Influence of iconic versus attention-directing gestures on word learning of preschool children

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Abstract

There is evidence that young children benefit from iconic gestures as additional input for word learning (Capone & McGregor, 2005). Iconic gestures capture properties of the referent and thus possibly facilitate word processing (McGregor, 2008). While research has mainly focused on toddlers comparing an iconic learning condition with a no-gesture condition this study sought to investigate the relative effect of iconic gestural cues compared to an attention-directing gesture on word learning of 4-year-old children.
In a within-subjects design, we investigated learning of unknown words. 24 typically developing (TD) 4-year-old children (12 boys, 12 girls) took part in this training study (3 sessions). Input conditions varied in terms of supplementary gestures. At each session, children heard the same nouns and verbs coupled with either an iconic gesture illustrating a property of the particular referent or an attention-directing gesture that was not meaningfully related to the referent. Word learning was assessed through naming and comprehension tasks immediately after the first training session (T1) and 2 days after completion of the training (T2). Accuracy was analyzed between conditions.
Girls and boys did not differ in terms of learning outcomes. Naming and comprehension of the target items improved from T1 to T2. Children performed better in comprehension than in production tasks. Although learning in the iconic gesture condition was superior to learning in the attention-directing gesture condition the differences failed to reach significance. Interindividual variability was high.
Children in this study learned new words regardless of the type of the gesture coupled. The results suggest that, on a group level, TD preschool children comparably exploit the characteristic capacity of iconic gesture to capture meaning as well as the capacity of the semantically meaningless, however attention-directing gesture to learn new words. Children seem to show individual responses to the use of supplementary gestures.

New methods in child language research
Syntax

Peer interaction: a fruitful context for second language acquisition?
Analysing children's conversation in kindergarten with the traceback method.

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Abstract

Data from studies of peer interaction in kindergarten (cp. Katz 2004) show that peers adopt verbal utterances from each other by imitating and extending them. Thus child-child interaction seems to be a fruitful context for children to take up constructions from their peers.
The usage-based traceback method (cp. Lieven, Salomo, Tomasello 2009) has until now only been used to investigate first language acquisition of English. We suggest that it would also be a promising approach for data of child-child interaction that could lead to insights about the role of constructions in second language acquisition in kindergarten.
In order to investigate the influence of peer interaction on L2-acquisition a pilot-study in a German kindergarten will be conducted, recording the utterances of two children with German as L2 over a period of 6 weeks during free play with peers. The data will be analysed using the traceback method, a procedure that demonstrates how multi-word utterances are composed from previously-formed. For this the corpus is divided into two parts: a test corpus, which contains the target structures to be traced back and a main corpus, which contains the component units. The repetition and/or combination (lexical or syntactic modification) of these component units should form the target structures. Each corpus is annotated with regard to part-of-speech (PoS) and syntactic relations with the CHILDES programs MOR and GRASP (Kol, Nir, Wintner 2013).
The traceback method will allow us to systematically analyse if and how children with German as a second language use the input of their peers for their L2-acquisition.
The adaption of the traceback method for peer interaction opens up the usage-based perspective on this important context of second language acquisition and furthermore is a first step to build a knowledge basis for peer centered approaches in early language pedagogy.

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Language development in atypical populations
Semantics and lexicon

Lexical organization in children with cochlear implants: Results from performance on semantic verbal fluency tasks

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Abstract

Some children with cochlear implants (CIs) do not achieve age-appropriate language skills. The neuro-linguistic mechanism underlying this outcome is not fully understood.
The aim of the present study was to explore the semantic organization of the lexicon as a possible source for this observed delay.
In this study we analyzed responses on semantic verbal fluency (VF) naming tasks in order to identify differences in word retrieval processes that elucidate the organization of words in the mental lexicons of children with CIs.
In the semantic VF naming tasks, subjects were asked to say, in one minute, as many words as possible, that belong to a certain semantic category (animals and food).
Responses of 26 children with CIs and 26 age- and IQ-matched normal hearing (NH) children, ages 7;0-10;8, on semantic VF tasks were recorded and transcribed. Latency time to each named word was measured using the Praat software.
The responses were classified into one of two word types: words that were part of a cluster (i.e., were named as part of a semantic sub-category; for example aquatic animals) or words that were produced in isolation (i.e., that were not part of a cluster).
Results show that, in both groups, latency times for retrieved words that were named in isolation (not part of a cluster) were significantly longer than the latency times for words that were named as part of a cluster. Moreover, latency times to retrieved words were significantly longer in the CI group than in the NH group, for both types of words (named in isolation and named in a cluster).
These results might imply that the lexical organization of children with CIs differs from that of NH children, concurrent with results recently reported using network analyses.
Results will be discussed in terms of their implications for evaluation and habilitation of children with CIs.

Child bilingual language development
Morphology

Handling a complex grammatical system: Child L2 learners' strategies of choosing a good plural form in German.

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Abstract

Plural in German is a complex grammatical system, as there are several forms that mark plurality on the noun. Whereas more traditional linguistic approaches state source-oriented rules for the distribution of those plural markers to the nouns (e.g. Wegener 1995), the schema approach (Köpcke 1998) formulates product-oriented schemas that determine the prototypical shape of German plurals.
Which strategies do child L2 learners of German use to handle the complex grammatical system? According to traditional approaches, they should use a source-oriented strategy and choose plural forms corresponding to the specific characteristics of the singular form. From the perspective of the schema approach, they should use a product-oriented strategy and choose plural forms which are the most optimal for expressing this grammatical function.
To answer this question, a study was conducted with 65 children from six to ten years old with Turkish or Russian as their L1 and with a control group of 20 children at the same age with German as their first language. They were given a booklet with 24 nonce words (presented as German singular forms) and a choice of three possible plural forms, respectively. Their task was to choose the best plural form for each of the presented items. The children resolved this task in teams of two or three. Thereby, they verbalized their strategies and motivations for the choice of a certain plural form.
The results show that the children made use of both source-oriented and product-oriented strategies. This can be concluded from their peer interaction during the execution of the task as well as from the plural forms they actually chose.
The study underlines that linguistic approaches focusing on only one of these two strategies are thus not sufficient to explain the handling of the German number system in the L2 acquisition process.

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Sign language acquisition and gestures
Pragmatics

Getting a Grasp on Children's Representational Capacities in Pantomime of Object Use

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Abstract

Previous research revealed that younger children have difficulties to enact actions with Imaginary Objects (IO) on verbal request (e.g., Njiokiktjien et al., 2000). Prior to the age of nine, they frequently depict the object by a part of their body (Body-part-as-object; BPO). Children thus display the object as whole rather than selecting characteristic features (e.g., the object's handle). Their behaviour suggests difficulties in extracting the distinctive features of the object and its use in a decontextualized fashion. The current study investigates children's progression from BPO to IO and the cognitive requirements of the task in greater detail. Forty five- and nine-year-old German children were asked to pantomime the use of 20 objects (e.g., toothbrush, pencil). In addition, a semantic association task was administered which requires the identification of distinctive features with and without context. Responses were categorized as BPO or IO. Children's pantomimes were further analysed with regard to structural properties along three dimensions: hand shapes, movement types and position of movement. Specifications along these dimensions form the distinctive features which characterize individual pantomimes. In line with prior research, the nine-year-olds clearly preferred IO depictions while the five-year-olds still produced a considerable number of BPO pantomimes. As expected, the nine-year-olds incorporated more distinctive features in their pantomimes than the five-year-olds. More importantly, children's selection of these distinctive features in pantomime was related to their performance on the semantic association task which involves the retrieval of decontextualized knowledge. We conclude that our findings reflect children's growing understanding how to handle the task and indicate internal representational change (Karmiloff-Smith, 1992). The production of BPO on verbal request already points to a remarkable capacity of preschoolers to operate on their knowledge explicitly. However, the selection of distinctive features involves a higher level of explication.

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Child bilingual language development
Syntax

When overlap with canonical word order is helping and hurting: evidence from bilingual children's comprehension of relative clauses in Dong and Mandarin

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Abstract

In the literature on relative clause (RC) processing and acquisition, the canonical word order (CWO) hypothesis proposes that when the RC overlaps with the CWO of the language, processing ease occurs (Bever 1970). The effect of overlap between complex and simple sentences in acquisition is interesting to examine in a typological context, given that languages differ in their configurational details (Diessel and Tomasello 2005; Diessel 2007). For instance, in languages like Mandarin and Dong (minority language in SW China), object RCs rather than subject RCs follow the CWO. The CWO hypothesis would predict an object RC advantage in these languages.

We tested 46 bilingual children aged 5;11-10;3 in a Dong village on Mainland China, assessing comprehension of subject and object RCs in both Dong (L1) and Mandarin (L2) using a picture-pointing task. The task is designed in a way that tests two aspects of sentence processing: children have to (i) assign the agent-patient relation correctly; and (ii) assign the head noun referent of the RC correctly, in order to point to the correct "animal".

Results indicate both an advantage and a disadvantage in object RC comprehension. Regarding agent-patient assignment, in both languages, object RCs elicited significantly more correct responses than subject RCs ($p < .05$). This object advantage is consistent with the CWO hypothesis. However, for head noun assignment, again in both languages, object RCs elicited significantly more errors than subject RCs ($p < .002$). In these responses, although agent-patient assignment is correct, children misinterpreted the object RCs as if they were simple SVO (CWO) sentences, and misinterpreted the subject of RCs as the head noun. These findings suggest that overlap with CWO of the language can have both enhancing and interfering effects in the processing of complex constructions in acquisition, when one looks into different aspects of sentence processing along development.

[300 words]

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Language development in atypical populations
Language, general

Event Structure Complexity and Verb Alternations in Children with SLI: What can we learn from the story of Cinderella?

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Abstract

Background: Children with Specific Language Impairment (CwSLI) demonstrate difficulties with verb knowledge and production of argument structure. Research findings into their use of verb alternations are inconsistent and there are few studies on their production from the perspective of event structure. Black and Chiat (2008) propose complexity of event structure (number of sub-events, e.g. act + process +state) as an alternative to verb argument structure complexity (number and arrangement of arguments entailed by a verb) in contributing to sentence production difficulties. In the absence of standardised clinical assessments in this area, familiar narratives may present a source of data.
Aims: To establish whether event structure complexity contributes to sentence production difficulties in CwSLI by comparing with typically developing children (TDC); to investigate the usefulness of a Cinderella narrative for assessment of verb alternations.

Methods and Procedures: Verbs used in Cinderella narratives (from 65 TDC aged 3; 02 – 10; 09 and 17 CwSLI, 6; 05 – 10; 01) were classified according to event structure complexity and potential to alternate. A between-groups comparison on verb alternations and complexity of event structures used (comparing CwSLI with age controls and a verb comprehension-matched control group (VCMC) of TDC) was carried out.
Results: Of thirty-one verbs which could alternate, two were alternated (by n=2 CwSLI and n=9 TD children). Older TDC (>6; 05) used a significantly higher number of simple (p=.013) but not complex event structures than CwSLI. No significant difference was found between CwSLI and VCMC. All children used more simple than complex event structure verbs.
Conclusions and Implications: Given the results of event structure analyses, it is hypothesised that poor verb knowledge and event structure complexity are related in CwSLI. Furthermore, all children may be using the most parsimonious way of describing events. These narratives were not a useful source of data on verb alternations.
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Quantitative and qualitative input factors
Syntax

Contextually modulated syntactic variability in child-directed speech

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Abstract

Many of the most widely-used corpora of child-directed speech (CDS) are transcripts of play-time contexts. Studies of these corpora often implicitly assume that such contexts are representative of CDS generally. Here, we compare CDS in meal-time contexts to CDS in play-time contexts, showing that context modulates syntactic variability. Such an effect suggests that it is not sufficient to study only play-time contexts when making generalizations about syntax in CDS.

We used the Gleason corpus from CHILDES in our analysis since it provides both meal-time and play-time conversations matched by child (n=22). To do the comparison, we extracted subcategorization frames, by verb, from the RASP parses found in the corpus transcripts. The number of unique frames that each verb occurred with was calculated by context, by child. We submitted these counts to a mixed effects Poisson regression. This regression included fixed effects for context (meal-time v. play-time), age in months (median: 39 months; mean: 41.5 months; range: 25-62 months), and their interaction, as well as random intercepts for verb and child.

We find a reliable positive effect of both meal-time (beta=.2859; $p<.001$) and age and a reliable negative interaction (beta=-.0017; $p<.001$) between the two. Within both meal-time (beta=.0011; $p<.001$) and play-time (beta=.0028; $p<.001$), we find that age and variability are positively correlated, but syntactic variability is greater in meal-time contexts for even the oldest children in our sample. This implies that, controlling for age, meal-time contexts show higher variability in syntactic distribution overall.

We have shown that context modulates syntactic variability in CDS. This suggests that studying other context-types along with play-time is necessary when generalizing about syntax in CDS. Future research will assess whether the nature of this syntactic variability in CDS could be informative for the learner.

Child bilingual language development
Language, general

Children's code-mixing tendency in a monolingual context: A quantitative look

Wild Nicole and Thordardottir Elin

Abstract

Code-mixing has been attributed to various factors, including lack of proficiency, frequency of code-mixing in the language input, and personal preference. This study examined code-mixing counts in each language of simultaneous learners of French and English.
Method: Participants included 32 3-year-olds (mean age, 34.5 (SD 4.09) and 47 5-year-olds (mean age 58.3, SD 3.9), simultaneous bilinguals with previous exposure to each language ranging from 5 to 93%. All children were developing normally. Spontaneous language samples were collected in each language in separate sessions with a monolingual examiner – a context that does not invite code-mixing. Samples were coded for percent of total words that were code-mixed. Vocabulary tests were administered in both languages (5 years: French EVIP and PPVT, 3-years: MacArthur-Bates CDI in French and English).
Results: In both languages and both age groups, percent code mixing was positively correlated with vocabulary scores in that language, and negatively correlated with exposure to that language ($p \leq .05$) with r values ranging from .399 to .739). Twelve of the 3-year-olds and 28 of the 5-year-olds had fewer than 3 code mixes. Considering only those children with 3 or more code mixes, ANOVA comparing the two age groups with previous language exposure as a covariate revealed that 3-year-old children code mixed significantly more than 5-year-olds (in English samples 40.93 (30.20) vs. 11.46 (17.91), $p=.002$; in French samples 6.08 (20.36) vs. .6077 (1.12), $p=.006$). Overall, more code mixing occurred in the English than the French samples.
Conclusions: The results show a strong language specific influence of exposure and proficiency on quantity of code mixing in a monolingual context, suggesting an effect of ability rather than personal preference, as the quantity of code mixing varied across languages within the same child. Code mixing is most likely in those speakers whose language proficiency differs sharply between the two languages.

Literacy and language
Language, general

Reading comprehension and its component skills in children with SLI

and children with dyslexia

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Abstract

Reading comprehension involves word decoding and oral language comprehension (Hoover and Gough, 1990). Young readers with dyslexia are at risk for reading-comprehension impairment. Reading-comprehension impairment also happens in children without word-reading deficits, and about 30% of these children is language-impaired.

Reading comprehension involves higher-order skills of working memory, inferencing, and comprehension monitoring (Cain & Oakhill, 2007). This study aims to examine whether Chinese children with specific language impairment (SLI) and children with dyslexia demonstrate difficulties in these skills.

Ninety-five eight-year-old Primary 2 children participated in this study. Using norm-referenced measures, these children were diagnosed as either normal (n=42), SLI (n=28), dyslexia (N=10), or SLI-dyslexia (n=19) at the end of Primary 1. The children completed tasks examining word reading, reading comprehension, written grammar, working memory, comprehension monitoring and literal and inferential reading comprehension of texts in which word and grammar levels were controlled.

Age and Ravens were used as covariates in all MANOVA and ANOVA analyses. In both word reading and reading comprehension, the normal group outperformed the three atypical groups and the SLI group scored higher than the dyslexic group. In word reading, the SLI and the dyslexia group performed better than the co-morbid group, and in reading comprehension, only the SLI group performed better than the co-morbid group. For written grammar, the normal group again performed better than the three atypical groups, and the SLI and dyslexia group outperformed the co-morbid group. For literal and inferential comprehension, the normal group performed better than the SLI and co-morbid group, and the same pattern of results was found for comprehension monitoring and working memory. The dyslexia group did not perform worse than the normal group in these higher-order skills. These results suggest different focus of reading comprehension intervention for children with SLI and children with dyslexia. (Project funded by Hong Kong RGC755110)

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First language acquisition
Language, general

Transcribing less to study more: how do we make longitudinal spontaneous data more effective?

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Abstract

In language acquisition studies, using data from longitudinal recordings of spontaneous interactions is difficult, mainly because it is time-consuming to record and to transcribe. For instance, an orthographic and phonetic transcription of one-hour session between a 2 years old and his/her parent may take until 30 hours of work.
This study aims to determine in the case of limited resources, what can be considered as a representative sample of children's linguistic behaviors to observe phonetic-phonological and/or lexical development. We focus here on children utterances, word types and tokens, sound types and tokens. We also wonder whether it's possible to select a representative sample of spontaneous productions on the basis of data collected through parental reports.
We used longitudinal recordings of spontaneous interactions between French-speaking children and their parents (90 sessions of 50 min, 4 children aged from 1;0 to 2;1, and 73 sessions of 30 min, 7 children aged from 1;5 to 2;8). Every session was transcribed phonetically and orthographically in CLAN and/or in PHON. French versions of the MacArthur-Bates Communicative Development Inventories (Bates et al., 1988) were filled by parents every month.
Preliminary results showed that there is no significant difference in the number of utterances, word types and consonant tokens between 50 min sessions and 30 min sessions, for certain ages. Secondly, there is no significant difference in the number of utterances or word types between the two halves of a recording, even if there seems to be a slight increase in production in the second half. Finally, as previously reported (Dale, 1991), CDI can give an estimation of the number of word types being produced by a child for a session and thus can be used to select sessions to transcribe in priority.
These preliminary results suggest that for lexical and phonetic-phonological issues, we might be able to narrow our transcriptions to transcribe less data but more children in more diversified situations.
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Cultural and social factors in child language development
Language, general

Sensitivity to emotional vocalization in infants: A cross-linguistic study with Japanese and English learning infants.

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Abstract

This study investigates Japanese and English learning infants' responses to emotional vocalizations in Japanese. Research on infant speech perception has shown that from very early in their life, infants are sensitive to the prosody of their language (e.g., intonation, rhythmic and pitch pattern [1]). Infants as young as 5-months of age are able to respond appropriately to positive and negative prosody [2]. A speaker's emotional intent is perhaps the first meaning preverbal infants can detect in language. Interestingly, while English learning infants show robust responses across languages such as English, French, Italian and German, they fail to respond to Japanese stimuli, suggesting that emotional vocal expression processing involves both universal and language/culture specific characteristics [3].
To investigate the roles of universal and cross-linguistic aspects of emotional vocal expression processing, we tested 5.5-month old Japanese and English learning infants using a visual preference looking paradigm. The stimuli were emotional non-sense vocalizations produced by multiple Japanese female speakers for 4 conditions – positive or negative valences and high or low arousal. Both overall listening time and listening time during the first look were submitted to a repeated measure ANOVA with Language as a between-subject variable and Valence and Arousal as within-subject variables. Both Japanese and English infants showed longer overall looking times to positive vocalizations over negative vocalizations. The listening time during the first look showed that while English infants listened to high-arousal vocalizations longer, Japanese infants showed no such differences.

These results suggest that the emotional vocal expressions in Japanese are discernable to both Japanese and English learning infants. At the same time, it also suggests that by 5.5-months, infants already show language specific responses to emotional prosody.

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Cognition and language development
Phonetics and phonology

The development of perceptual dialect categories from childhood through adulthood

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Abstract

(i) Problem: Previous research on dialect perception has shown that infants are capable of distinguishing between their home accent and unfamiliar regional accents (Butler et al., 2011). Experiments with pre-school and school aged children have found that 5-year-olds are not capable of making explicit categorization judgments based on accent, while 7- year-olds are (Floccia et al., 2009). The study of adolescents has further demonstrated that 14-year old children are able to categorize talkers by regional variety within their native language, although they do not perform as well as adults (Williams et al., 1999). The current work aims to track the development of perceptual dialect categories from middle through late childhood to determine when children acquire adult-like abilities to perceive and categorize dialects based on speech.
(ii) Method: An auditory free-classification task was used in which listeners grouped talkers by regional dialect based on short speech samples. Five male and five female talkers from each of four dialect regions in the US were classified. 393 monolingual speakers of American English were tested, including 100 elementary school children (8- 11 years old), 93 middle and high school children (12-17 years old) and 200 adults (18-86 years old).
(iii) Results: The perceptual dialect categories of elementary school children were qualitatively similar to adolescents' and adults'. However, listeners of different ages exhibited some quantitative differences: the youngest children made more dialect groupings and more errors than older listeners, and there was a steady increase in grouping accuracy across the three age groups.
(iv) Conclusion: Even the youngest group of children (8- to 11-year-olds) made qualitatively adult-like dialect groups and children's dialect classification ability increases quantitatively with age. These results suggest that children's skills with regional dialect perception develop rapidly after they reach middle and high school, when they exhibit adult-like perceptual representations of regional dialects.

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First language acquisition
Phonetics and phonology

Type seems to matter: Prosodic focus marking in child Mandarin Chinese

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Abstract

Mandarin Chinese primarily uses prosody to encode focus, defined as new information in a sentence. Focused constituents can differ in size (narrow focus on a word vs. broad focus over a sentence) and contrastivity (contrastive vs. non-contrastive). In adult Mandarin, the distinction between focus and non-focus is realised via an increase in word duration and pitch range of the lexical tones in the former; and (uncontrastive) narrow-focus and contrastive (narrow-)focus are distinguished from broad focus in the same way, while the former two focus types hardly differ prosodically (Xu, 1999; Brief, 2010; Chen & Braun, 2006).

The current study is a first study examining Mandarin-speaking children's use of pitch and duration in focus-marking. Specifically, we ask (1) how children distinguish focus from non-focus; (2) how they distinguish focus types.

Question-answer pairs were embedded in a picture-matching game to elicit SVO sentences from children (12 4-5yrs, 13 7-8yrs, and 12 9-11yrs) and adults in five focus conditions: narrow focus at sentence initial (NF-i), medial (NF-m), and final (NF-f) positions, contrastive focus at sentence medial (CF-m) position, and broad focus (BF). Pitch range and duration of the sentence-medial verbs were measured. Question 1 was addressed by comparing NF-m with NF-i and NF-f and question 2 by comparing NF-m and CF-m with BF.

Preliminary analyses on part of the 4- and 8-year-olds' data showed that children in both age groups used pitch and duration to distinguish focus from non-focus in an adult-like way. However, only the 8-year-olds could use duration like adults in distinguishing NF-m and CF-m from BF; neither group systematically used pitch range for this purpose. These results suggest that distinguishing focus types differing in constituent size poses a bigger challenge to Mandarin-speaking children. Further analysis on the remaining data are currently being conducted to verify these results.

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First language acquisition
Semantics and lexicon

An Experimental Study of Children's Acquisition of Mandarin SFPs' Modal Meaning

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Abstract

Mandarin Sentence Final Particles (henceforth SFPs) BA and MA display the speaker's attitude towards the state of affairs. They form a pair encoding different degrees of certainty (Li, 2006) and strengths of inference (Palmer, 2001). A look into the acquisition of the particles could reveal the modal semantic development in Mandarin children. Previous experimental studies have displayed children's increasing ability to detect the different strengths of modal items from age 3 (Hirst and Weil, 1982; Hoffner et al, 1990; Day, 2000). For BA and MA, longitudinal observations reveal their early appearance in children from 1;6 (Yang 2009, 2010). However, naturalistic production cannot precisely reflect children's distinction and comprehension.

To better understand 3-to-6-year-old children's interpretation of the particles' modal meaning, we have designed an experiment with a "felicity judgment task" (Chierchia, 2001). Three stories, each with six scenarios, are composed. Each scenario includes an eliciting question and a stimulus picture either illustrating a definite situation biased for MA, or depicting more possibilities biased for BA. Two puppets utter a pair of test sentences which differ in the SFPs. Some test pairs also include modal adverbs like ye3xu3 (perhaps), or evidential parentheses like kuai4kan4 (look quickly). These constituents construct a modal concord with the particles. Children are instructed to choose and explain which utterance sounds better.

It is expected that young children might not well differentiate the two particles, and a better performance should appear in the test pairs with cues. Pilot findings suggest an increasing ability to discriminate the two particles against age. In addition, a better performance in MA-biased scenarios indicates an earlier acquisition of the particle for certainty. We will discuss factors that affect children's interpretation of modal particles in light of our findings.

Cultural and social factors in child language development
Language, general

Early Communicative Routines within Lazuri-Speaking Caregiver-Toddler Dyads in Turkey

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Abstract

Children develop communication skills in diverse sociocultural environments with early forms of joint activity taking place with caregivers varying in verbal and non-verbal socialization practices (Hyrd, 2011; Racine & Carpendale, 2007; Schieffelin & Ochs, 1986; Whiting & Whiting, 1975). This study examines patterns of early forms of communication within a community experiencing language loss due to rapid assimilation into the mainstream Turkish culture. It is the first to examine distinct verbal and non-verbal interactive patterns of joint activity during floor play among intergenerational caregiver-toddler dyads speaking Lazuri—an endangered Southwest Caucasian language spoken by approximately 20,000 native-speakers along the coastal border regions of Turkey and Georgia (Ethnologue, 2013). We recorded the usage of deictic gestures (pointing, showing), recognitory gestures (pretend play with objects) and vocal and object-use imitation among 62 Lazuri speaking caregiver-toddler dyads (28 girls and 34 boys, mean age=29 months, range 12-48 months). Each child was recorded in interaction with a primary caregiver (19 mothers, 11 fathers, 16 grandmothers, and 16 grandfathers) within two 10-minute, structured-play contexts: (1) farm-animal toys and (2) tea-party set. Importantly, grandparents were included as caregivers due to their preference for using Lazuri over Turkish. We coded gestures and imitation by all social partners from previous studies of floor play (Bakeman & Adamson, 1984; Eckerman, 1993; Killen & Uzgiris, 1981). Our results show that age and context affected interactional verbal and non-verbal outcomes across generations. Showing and imitation of vocalization occurred more frequently in the farm-animal context, which appeared to elicit teaching of object names. In contrast, recognitory gestures and object-use imitation were more frequent in the tea-party context, which elicited teaching of cultural values and rituals. Furthermore, in comparison to prior studies of English speaking dyads Lazuri caregivers only rarely imitated the vocalizations of their children suggesting cultural differences in infant-directed speech.

Literacy and language
Semantics and lexicon

The Relationship Between Breadth and Depth of Vocabulary and Oral Narrative Abilities in Young Mandarin-Speaking Children

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Abstract

Previous studies with English-speaking children indicate that vocabulary and oral narrative abilities are both important predictors of reading comprehension. These relationships have also been documented among children who speak Mandarin Chinese. However, it is unclear to what extent oral vocabulary and narrative abilities are related to each other. The aim of this study is to investigate the relationship between these two domains of oral language in a group of young Mandarin-speaking children. Specifically, we examined the relationships between two aspects of vocabulary (breadth and depth) and two aspects of oral narration (production of story grammar elements and answer to comprehension questions).

Sixty-two children (31 boys) between 62 and 74 months of age participated in five tasks. To assess vocabulary breadth, children completed a picture identification task, in which they selected from picture arrays the ones that went with the target words. To assess vocabulary depth, children completed a repeated word association task by responding to each stimulus word with three associations (e.g., spider-web, legs, black) and a definition task by explaining meaning of familiar words (e.g., What do you know about a hat? Tell me what a hat is.). To assess narrative abilities, children read a wordless picture book and produced a story. Stories were analyzed on the inclusion of six story grammar elements (i.e., setting, characters, initiating event, complication, attempt, consequence). In addition, children answered six questions to assess their understanding of the picture sequence.

Results showed that both vocabulary breadth and depth predicted children's oral narrative abilities but vocabulary depth was a stronger predictor among the two. We are currently conducting a replication study with a new cohort of children and a different vocabulary breadth measure (picture naming). These findings indicate the need to increase vocabulary depth in children at the emergent literacy stage.

First language acquisition
Semantics and lexicon

Multiple routes to child acquisition of form-meaning mappings in Turkish Sign Language classifiers

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Abstract

Expressions of spatial relations in many signed languages often involve classifier constructions: complex predicates encoding objects' locations and motions, in which their real-space locations and motions are mapped in an analogue way onto a small-scale space. The classifiers are connected to the predicates' arguments and form a closed class of morphemes, group referents according to salient characteristics, for example animacy or shape, and they are expressed by particular shapes of the hands. For example, balls are categorized as roundish objects in TİD and expressed by a hand shape with spread, curved fingers.

Previous studies show that classifier constructions are difficult to acquire and are not mastered until the age of nine. Young children tend to substitute target classifiers by more general ones, with less marked hand shapes: index finger and flat hand ([1], [2], [3]). This is ascribed to the morphological complexity of classifier constructions, and to articulatory and/or classificatory difficulties.

The current study is the first to investigate classifier choice by children acquiring Turkish Sign Language (TİD) as their native language. We studied two age groups: 4-7 and 7-9 year old children. Ten children in each group described static and dynamic spatial settings, elicited by pictures and short video clips. A comparison between their descriptions and those of ten native adult TİD signers reveals that especially the younger children, indeed, use general classifier forms, similar to previous studies. Yet, in contrast to these studies, their classifier choice shows much more variety than that of the adults, including marked forms. Apparently, they overgeneralize mapping of visual and action properties on their classifier forms. This suggests that the acquisition challenges do not so much concern articulatory difficulties or morphological complexity, but rather the development of a more abstract, target-like linguistic classification of objects.

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Language development in atypical populations
Syntax

‘MetaTaal’: Enhancing complex syntax in children with specific language impairment: a metalinguistic and multimodal approach

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Abstract

Currently, most research on effective treatment of (morpho-)syntax in children with SLI pertains to younger children. In the last two decades, several studies have provided evidence that intervention for older school-age children with SLI can be effective (Ebbels, 2007; Hirschman, 2000; Levy & Friedman, 2009). These metalinguistic intervention approaches used two-dimensional visual support and reading or writing activities to teach grammatical rules explicitly.
The present study examined the effectiveness of a combined metalinguistic and multimodal approach. The intervention was adapted to suit poor readers and targeted the improvement of relative clause production. Relative clauses still pose difficulties for older children with SLI (Levy & Friedman, 2009). ‘MetaTaal’ uses Lego® bricks of different shapes and colours as abstract representations of word classes and grammatical functions. Children effectively learn to build sentences with the material. In addition to providing visual support, the tactile/kinesthetic and motor channels are also deployed in this approach.
Participants were 12 monolingual Dutch children with SLI (mean age 11;2). A quasi-experimental multiple-baseline design was chosen to evaluate the effectiveness of the intervention. A set of tasks was constructed to test relative clause production and comprehension. Two balanced versions were alternated in order to suppress a possible learning effect from multiple presentations of the tasks. After 3 monthly baseline measurements the children received protocolled individual intervention twice a week during 5 weeks. Tests were repeated directly post-therapy and at retention measurement 3 months later. During the programme, the speech therapist delivering the treatment remained blind to the test results.
Results showed that 5 hours of therapy produced significant improvement on the production tasks, but not on the comprehension task. The gains were maintained 3 months later. The motor and tactile/kinesthetic dimensions of the ‘Metataal’ approach can be regarded as a valuable addition to the metalinguistic approaches studied thus far.

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Quantitative and qualitative input factors
Language, general

Age of Acquisition Norms for Nouns and Verbs in 22 Languages

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Abstract

Word characteristics such as frequency, imageability, concreteness and length are considered good predictors of performance in lexical tasks like picture naming, word comprehension or lexical decision-making. There is also evidence that the age of acquisition (AoA) of words can partly explain aspects of word processing behaviour in later childhood and adulthood (Morrison et al., 1992; Brysbaert & Cortese, 2010).

In the present study, we collected AoA norms for 158 nouns and 142 verbs in 22 languages: Afrikaans, British English, Catalan, Danish, Finnish, German, Hebrew, Irish, IsiXhosa, Italian, Lithuanian, Luxembourgish, Maltese, Norwegian, Polish, Russian, Serbian, Slovak, South African English, Spanish, Swedish and Turkish. In a preparatory picture naming procedure, adult native speakers of 34 languages were asked to name 508 object and 504 action pictures. Words shared among the target languages were retained for the final corpus. Our study followed the typical procedure for establishing AoA (see Morrison et al. 1997) and was performed on-line (see www.words-psych.org). 804 adult participants (at least 20 for each language) were asked to specify the age at which they learned the words in their native language.

The vast majority of words were rated as acquired by the age of 7 years, demonstrating overlap in early vocabulary across diverse languages. Significant correlations between all language pairs point to a similar developmental sequence for the words under investigation. No previous study has compared AoA judgements on a shared set of words in a wide range of languages. 'The AoA data collected in the 22 languages provides word characteristics that should assist the design of cross-linguistic psycholinguistic experiments and the preparation of materials for use in the assessment and treatment of language disorders in preschool children. The AoA data are currently being used to control for AoA in the construction of cross-linguistic lexical tasks assessing word knowledge in monolingual and bilingual children.

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