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Program at a Glance

Monday May 19, 2025

- **08:15 09:15** Welcome
- $09{:}15-09{:}30 \quad {\rm Introduction}$
- $09:30-10:50 \quad Talk \ session \ 1$
- $10{:}50-11{:}20 \quad {\rm Coffee \ break}$
- $11{:}20-12{:}40 \quad Talk \ session \ 2$
- 12:40 13:50 Lunch
- 13:50 14:50 Keynote 1
- $14{:}50-16{:}30 \quad Poster\ session\ 1\ \&\ Coffee\ break$
- $16:30-17:50 \quad {\rm Talk\ session}\ 3$

Tuesday May 20, 2025

- $09{:}00-09{:}30 \quad \mathrm{Welcome}$
- 09:30 10:50 Talk session 4
- $10:50-11:20 \quad {\rm Coffee \ break}$
- 11:20 12:40 Talk session 5
- 12:40 13:50 Lunch
- 13:50 14:50 Keynote 2
- $14{:}50-16{:}30 \quad Poster \ session \ 2 \ \& \ Coffee \ break$
- $16:30-17:50 \quad {\rm Talk\ session}\ 6$

Keynotes

Keynote 1: How social interaction contributes to early language acquisition

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Language is a uniquely human system of communication, acquired by infants with remarkable speed and efficiency across diverse linguistic and cultural settings. Social interaction plays a pivotal role in this process, shaping infants' experiences from birth and influencing cognition from attention to higher-level learning.

What makes social language learning so powerful? I will present two lines of research, which both have in common that they study infants as active participants in social interaction. Using lab experiments with reactive devices, I demonstrate the impact of socially contingent interaction for learning in moment-to-moment interactions. Using wearable devices and long-form audio recordings, I access infants' real-live socio-communicative experiences at home, and study the effect of the cumulative information resulting from communication sequences on language acquisition in ongoing work.

Keynote 2 : Talker variability in spoken-word recognition: Towards a new computational model

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The acoustic form of words varies enormously, for example because different talkers say words in radically different ways. Perceptual learning is one of several core cognitive mechanisms that help listeners deal with this variability. Listeners first learn how individual talkers speak and then use that knowledge later, to help them recognize words spoken by those talkers. I will argue in this talk that this type of talker-specific adaptation applies not only to the segmental properties of speech but also to its suprasegmental properties. I will present evidence that Dutch talkers vary in how they cue lexical stress and that Dutch listeners can learn about these talkerspecific stress cues and use that knowledge in spoken-word recognition. I will then present a new model of spoken-word recognition, one that captures adaptation to talker-based segmental and suprasegmental variability: the Adaptive Bayesian Continuous-speech (ABC) model.

Talk session 1

The role of orthography in spoken first and second language production

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Purpose: When we write, we often activate the words' sounds in our mind (e.g., Zhang & Damian, 2010), but when we speak, we only rarely activate the words' letters (e.g., Alario et al., 2007). Thus, orthography seems not automatically activated during speaking in our native language (L1). This pattern may be different when speaking in a second language (L2): while the L1 is acquired first in spoken and later in written modality, the L2 is often acquired simultaneously in both modalities, creating stronger word-letter associations in the L2. Therefore, we aim to study whether orthography plays a larger role in L2 vs. L1 speaking.

Method: We measured phonological and orthographic priming in spoken picture naming across the L1 and the L2 for English and French. L1 speakers of English (N= 60) and French (N= 60) and L2 speakers of both languages (N= 60) performed a dual task in which an auditory lexical decision task was alternated with a picture naming task. The lexical decision items were phonologically and orthographically (PO) related (e.g., BEE), only phonologically (P) related (e.g., TEA), or unrelated (e.g., LIFE) to the subsequent picture name (e.g., KNEE).

Results: Participants were faster to name pictures after a P vs. an unrelated prime in both languages, but an additional advantage for PO primes was only present in the L2 group.

Conclusions: This study shows that orthography contributes more to L2 than L1 speaking, suggesting that the learning modality influences which representations are automatically activated during language production.

References:

Alario, F.-X., Perre L., Castel, C., & Ziegler, J. C. (2007). The role of orthography in speech production revisited. *Cognition*, 102(3), 465-474.

Zhang, Q., & Damian, M.F. (2010). Impact of phonology on the generation of handwritten responses: Evidence from picture-word interference tasks. *Memory & Cognition*, 38(4), 519–528.

Keywords: bilingualism, spoken production, orthographic priming

More harm than good? The role of language control in second language acquisition of vocabulary

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In multilingualism research, language control (i.e., the process mitigating cross-language interference) has been recognized as quintessential for multilingual language use. In contrast, its role during second language acquisition (SLA) and thus during the onset of multilingualism remains unclear. To address this research gap, this study examines the influence of language control on the acquisition of second language (L2) vocabulary. Importantly, while language control aids multilingual processing, it is nevertheless associated with a processing cost, particularly in unbalanced bilinguals. It follows that language control may not be solely beneficial for SLA. In fact, research on domain-general cognitive control, which overlaps partly with language control, suggests that control processes may impair SLA, as they can prevent learners from detecting relevant cues in the respective input (Smalle et al., 2021). We therefore predict that the implementation of increased language control will impede L2 vocabulary acquisition. Method To test this hypothesis, we are conducting a study in which monolingual English speakers acquire 20 Dutch words during three test sessions. Participants complete a picture-word learning task at each session in which they name pictures in either their L1 or new L2. The task thus includes language switch and repetition trials. A subsequent vocabulary test determines participants' learning gains. If language control impedes L2 vocabulary acquisition, we expect learning gains to be lower in language switch than repetition trials, since switch trials require comparatively more language control. Data collection for this study is close to completion. Its results will offer novel insights into the link between language control and SLA, particularly whether language control hinders or helps the acquisition of vocabulary in a new language.

References:

Smalle, E. H., Muylle, M., Duyck, W., Szmalec, A. (2021). Less is more: Depleting cognitive resources enhances language learning abilities in adults. *Journal of Experimental Psychology: General*, 150, 2423–2434.

Keywords: language control, second language acquisition, bilingualism, vocabulary acquisition, language switching

Language Control in Bilingual Comprehension

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Bilingual comprehension is an immensely intricate process in which both languages are activated simultaneously, leading to cross-language interference. The process that helps bilinguals navigate through this interference is called language control, and it does so by increasing their chances of selecting words in the target language (Declerck, 2019). While language control has been extensively explored in the production literature, there is a significant gap in understanding how this process works during comprehension. Therefore, our goal is to investigate the presence and nature of reactive language control during written bilingual comprehension. In the present study, we will test bilingual Dutch-English speakers. To this end, we will utilize the Bilingual Flanker paradigm with a semantic categorization task and introduce an additional condition – neutral condition (non-words) to the original paradigm (Declerck et al., 2018). Through this approach we aim to provide insight into the underlying mechanism of language control. While in production-based literature there are a few measures that account for this claim (i.e., asymmetrical switch costs, reversed language dominance, etc.), these measures have not been as indicative in comprehension studies (see Declerck & Koch, 2023). Ultimately, this ongoing study will give us the opportunity to answer crucial questions about inhibition as the most probable underlying mechanism of language control during bilingual comprehension.

References:

Declerck, M. (2019). What about proactive language control? Psychonomic Bulletin & Review, 27(1), 24–35.

Declerck, M., Snell, J., & Grainger, J. (2018). On the role of language membership information during word recognition in bilinguals: Evidence from flanker-language congruency effects. Psychonomic Bulletin & Review, 25(2), 704–709.

Declerck, M., & Koch, I. (2023). The concept of inhibition in bilingual control. Psychological Review, 130(4), 953–976.

Keywords: Language control, Bilingual language comprehension, Bilingual Flanker paradigm

What Language Is This? How Expectations Shape Pronunciations

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However naïve a second language (L2) learner might be, it is difficult to rule out at least some familiarity with a given L2 if it is represented on a global stage. Living in Europe, one does for example need not have any formal instruction in the German language in order to have a conception of its phonemic inventory and phonotactic structure, as exposure through social and popular media can already provide ample input. Or in other words, one does not need to speak German in order to be able to imitate a German speaker.

This factor might have undesirable consequences whenever naïve L2 learners are expected to not have any beforehand knowledge of L2 grapho-phonemic conventions, as can be the case when examining the role of orthographic congruence in second language acquisition.

The present study aims to investigate how the simple indication of an L2 might be sufficient to shape L2 phonological representations and subsequent productions, by administering a reading aloud task. Naïve learners of German (N=170) were given three lists of German words, each with a different indicated L2. Words were presented as being either French pseudowords (L1), German words (familiar L2 in France) or Estonian words (unfamiliar L2 in France). Participant's productions were then transcribed to be compared to official German pronunciations by measuring the phonological Levenshtein distance between the two.

Results reveal that language expectations might indeed have an unexpected influence on L2 productions that is seldom taken into consideration in the second language acquisition literature.

Keywords: Bilingualism, L2 word production, L2 pronunciation, Language familiarity

On the relationship between bilingual language control and domain-general executive control

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The present research aims to further our understanding of the overlap between bilingual language control and domain-general executive control (Branzi et al., 2016). We investigate two components of Inhibitory Control, interference suppression and response inhibition (Friedman & Miyake, 2004) using a Flanker Task and a Triad Task; we also assessed potential interaction effects between these two subcomponents of inhibitory control.

35 Italian (L1) -English (L2) bilinguals were asked to complete a linguistic and a non-linguistic version of the Flanker Task and a Triad Task of comparable cognitive load. We predicted that participants would show longer response times and lower accuracy rate in the incongruent condition and the non-switch condition.

In the non-linguistic Flanker Task, participants didn't show any interference suppression or response inhibition effects. In the linguistic version, nevertheless, participants showed a switching effect but not a congruency effect, being faster and more accurate in the incongruent non-switch condition. The results of the Triad Task, in its linguistic and non-linguistic version, support our initial hypotheses: participants show significant congruency and switching effects.

These findings suggest there is no overlap between bilingual language control and domain-general executive-control in the present study. One reason for it may be that that the Triad Task is a more cognitively demanding condition. Future research should investigate how individual differences modulate the extent of this relationship.

References

Branzi, F. M., Calabria, M., Boscarino, M. L., & Costa, A. (2016). On the overlap between bilingual language control and domain-general executive control. *Acta Psychologica*, 166, 21–30. https://doi.org/10.1016/j.actpsy.2016.03.001

Friedman, N. P., & Miyake, A. (2004). The Relations Among Inhibition and Interference Control Functions: A Latent-Variable Analysis. *Journal of Experimental Psychology: General*, 133(1), 101–135. https://doi.org/10.1037/0096-3445.133.1.101

 $\label{eq:keywords:bilingualism, psycholinguistics, cognitive functions, inhibitions, individual differences, flanker task, triad task, attentional control$

Talk session 2

An ERP study on speaker meaning inference during the processing of indirect replies in multilingual dialogues

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For successful communication, interlocutors must interpret speaker meaning beyond what is explicitly stated. Accordingly, a pragmatic inference is required, as is the case for indirect replies. For example, "Giving a good presentation is complicated" is indirect in response to "Did you like my presentation?" but direct when answering "What is it like giving a presentation?". A key question is whether interpreting speaker meaning in indirect replies is affected by the cognitive demands of listening to a second language (L2). In line with previous studies (Egorova et-al., 2013,2014; Zhang et al., 2024), we hypothesized early neural signature of indirect reply processing in L1 dialogues, which would be hindered in L2. Forty French-speaking students listened to 144 dialogues in French (L1) and English (L2), each ending with the same reply, interpreted as direct or indirect depending on the preceding question. Event-related potentials (ERPs) time-locked to the final word of each reply were recorded. To ensure dialogue comprehension, one-third of the trials included a question about the interpretation of the reply. A cluster-based permutation test revealed significant differences when processing dialogues in French and English, emerging early between 100 and 200ms and persisting from 400ms onward. Given this language effect, the same analyses of indirectness were conducted for each language. In L1, an early frontocentral effect of indirectness between 100 and 200ms was observed with a negative shift for direct replies. In L2, this effect was absent. However, this was not due to miscomprehension (92%)comprehension score). These findings suggest that the interpretation of speaker meaning exhibits an early response guided by the expectation created by the preceding question on L1 replies. The cognitive demands in L2 can disrupt expectations based on speaker meaning. This study advances our understanding of pragmatic processing in L1 and L2 and its neural underpinnings in multilingual communication.

Keywords: ERPs, neurocognitive processes, pragmatic inferences, second language, indirect replies

L2 early- and late-stage prediction: The effect of proficiency

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Purpose: Recent research suggests that prediction in both native and non-native (L2) speakers occurs in two stages: an automatic early-stage and a cognitively demanding late-stage. In L2 speakers, delayed prediction was only found at the more costly late-stage (Corps et al., 2023), but if this delay is driven by proficiency remains unclear. Therefore, this study compares the timing of early-stage and late-stage predictions between low-proficiency and high-proficiency English L2 speakers.

Method: Using the Visual World Paradigm, 54 L2 English speakers listened to predictable sentences (e.g., *The singer plays the guitar*) and unpredictable sentences (e.g., *The cousin forgets the guitar*) while viewing four images (target: *guitar*; distractors: *microphone* (agent-related), *cards* (verb-related), *strawberry* (distractor)). Their task was to select the image that best matched the sentence which was used as a measure of offline accuracy. Divergence point analysis (DPA) was employed to assess early-stage (agent-related fixation) and late-stage (suppression of agent-related distractor) predictions, and LexTALE was administered to test language proficiency.

Results: For offline accuracy, GLMER revealed a significant interaction of proficiency and predictability. For online processing, both groups exhibited robust two-stage prediction patterns, evidenced by earlier fixations on the target and suppression of the agent-related distractor after verb onset. Surprisingly, DPA showed that fixation divergence did not differ between the lowproficiency and high-proficiency groups for either early-stage or late-stage predictions.

Conclusion: High-proficiency speakers show higher accuracy in offline comprehension tasks, but this advantage does not extend to the speed of online semantic prediction, even in the more cognitively demanding late stage.

References

Corps, R. E., Liao, M., & Pickering, M. J. (2023). Evidence for two stages of prediction in non-native speakers: A visual-world eye-tracking study. *Bilingualism: Language and Cognition*, 26(1), 231–243.

Keywords: predication, proficiency, English L2, VWP

The effects of focus on the interpretation of short exchanges

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Purpose: People produce ambiguous and indirect statements1 such as "It was a *mild* hurricane" in response to questions (e.g., "Was it a serious storm?"). They use pitch accents to focus words and aid comprehension2. We investigate whether pitch accents guide listeners' interpretation of semantically ambiguous sentences, particularly when focus and content clash.

Methods: In an online study, adult native English speakers read questions and heard ambiguous answers and responded yes/no-i.e., whether the answer was affirmative or negative. We manipulated the adjective (intense/mild) and noun (hurricane/rain) pointed towards "yes" or "no" and the position of pitch accent (on the noun or adjective). Experiment 1 (n=46) tested whether pitch accents influenced interpretation. Experiment 2 (n=49) introduced explicit affirmative or negative interjections ("yes/no, it was was a *mild* hurricane"). We analyzed response types and latencies (GLMs), and used clustering analyses to explore individual differences.

Results: In Experiment 1, participants weighted accented words more heavily, but clustered into three groups depending on their reliance on accent, noun, and adjective. Experiment 2 showed that pitch accents influenced responses even when an interjection was present. Clustering analyses revealed that a quarter of participants relied almost exclusively on lexical meaning, while most were sensitive to prosodic cues and balanced all available cues.

Conclusions: Pitch accents influence interpretation even with explicit disambiguating information. These findings support interactive models in which listeners dynamically integrate prosodic and lexical cues, and show variability in individual cue weighing.

References:

1. Trott, S., Reed, S., Kaliblotzky, D., Ferreira, V. & Bergen, B. The Role of Prosody in Disambiguating English Indirect Requests. *Lang Speech* **66**, 118–142 (2023).

2. Kurumada, C., Brown, M., Bibyk, S., Pontillo, F. & Tanenhaus, M. K. Rapid adaptation in online pragmatic interpretation of contrastive prosody. in *Proceedings of the Annual Meeting of the Cognitive Science Society* (2014).

Keywords: prosody, pitch accent, semantic ambiguity, speech comprehension, individual differences, focus marking

The Impact of Visuospatial Cognitive Load on Predictive Language Processing: An EEG Investigation

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Purpose: Increased visuospatial cognitive load has been shown to delay predictive language processing in eye-tracking studies (Allison et al., under review). It remains unclear whether this effect stems from multimodal integration of auditory and visual stimuli or from competition for shared cognitive resources between language and visuospatial cognition. This study investigates these possibilities using EEG, which allows predictive processing without combining visual and auditory stimuli.

Method: A 2x2 within-subject design was employed, manipulating visuospatial cognitive load (load vs. no load) and sentence predictability (predictable vs. unpredictable). 33 L2 English speaking participants first saw 9 blank squares: in the load condition, they memorized the order and locations of four squares, while the control condition involved no manipulation. Afterwards, participants listened to English sentences and selected the most corresponding picture. In the load condition, they then had to recall the order and location of the squares. We analyzed the N400, a neural component elicited by unpredictable stimuli.

Results: A significant main effect of predictability was observed in the N400, confirming robust predictive language processing. However, there was no main effect of visuospatial cognitive load, nor a significant interaction between predictability and cognitive load.

Conclusions: The absence of a cognitive load effect in the EEG data suggests that the interference observed in eye-tracking studies is likely due to multimodal integration rather than competition for shared cognitive resources. These findings underscore the importance of considering multimodal interactions in cognitive load studies and provide new insights into the mechanisms underlying predictive language processing.

Reference:

Allison, C., Huettig, F., Fernandez, L., & Lachmann, T. (under review). Visuospatial Working Memory Load Reduces Semantic Prediction in the Visual World. *Language, Cognition and Neuroscience.*

Keywords: Predictive language processing, Visuospatial cognitive load, EEG, N400

The Influence of Parafoveal Syntactic Information on Word Processing in German and Chinese Reading

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One of the key debates in parallel and serial reading models is whether syntactic-semantic information from parafoveal words that are not fixated can be processed in parallel and influence the reading of the current word (foveal word). Furthermore, no existing model has accounted for the potential influence of the characteristics of different writing systems. The present study investigates how parafoveal syntactic information influences the reading of foveal words in German and Chinese.

A modified RSVP-flanker paradigm combined with a lexical decision task was implemented to measure the impact of parafoveal syntactic conditions (German: definite articles; Chinese: classifiers) on response for foveal words in both languages. The results indicate that parafoveal definite articles, especially gender agreement, influence the processing of the current foveal word during reading German. In Chinese, while parafoveal classifiers do affect the reading of the foveal word, this influence is primarily driven by the semantic properties of the classifier rather than its syntactic information.

This study demonstrates that in both German and Chinese reading, parafoveal information influences the reading of the foveal word. However, the nature of this influence differs between the two languages. This suggests that future reading models may need to account for the impact of parafoveal information on foveal word processing and consider the characteristics of the writing system itself.

Reference:

Engbert, R., Nuthmann, A., Richter, E. M., & Kliegl, R. (2005). SWIFT: A Dynamical Model of Saccade Generation During Reading. Psychological Review, 112(4), 777–813.

Rayner, K. (1998). Eye movements in reading and information processing: 20 years of research. Psychological Bulletin, 124(3), 372–422.

Snell, J., Meeter, M., & Grainger, J. (2017). Evidence for simultaneous syntactic processing of multiple words during reading. PLOS ONE, 12(3), e0173720.

Keywords: Parafoveal processing, Syntactic processing, Parafoveal on foveal effect, Cross, linguistic study, Reading in German, Reading in Chinese

Talk session 3

The Role of Phonological and Semantic Information in Early Vocabulary Development: A Study on Kindergarten Children from Disadvantaged Backgrounds

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Context: Early vocabulary development is crucial for academic success and social integration. The size of a child's vocabulary before primary school strongly predicts later reading skills, particularly comprehension (Ouellette,2006). However, children from disadvantaged socio-economic backgrounds often have smaller vocabularies, affecting their ability to progress beyond basic decoding (Armstrong et al., 2017). Chiat's theory distinguishes two lexical learning stages: fast mapping and slow mapping, where phonological and semantic processes interact over time. A weak phonological form limits the refinement of phonological, semantic, and syntactic functions during slow mapping (Gray, 2006). Despite this, early interventions in vulnerable populations often focus primarily on the semantic aspects of vocabulary learning (Janssen et al., 2019).

Objective: This study aims to investigate the relative contribution of phonological and semantic information to the gradual consolidation of words in memory, with a focus on the added value of phonological components.

Methodology: We conducted an experimental study with three groups (N=122) of 5-yearold children enrolled in REP/REP+ kindergartens. Three vocabulary learning approaches were compared: one emphasizing phonological information, another focusing on semantic information, and a third combining both phonological and semantic cues. Vocabulary acquisition was assessed at three intervals-immediately, after one day, and after one week-to measure both breadth (production, recognition) and depth (phonological judgment, semantic association) of learned words.

Results: We hypothesize that the phonological group will outperform the semantic group in word retention (Janssen et al.,2019), while the combined group will achieve higher vocabulary depth scores. Individual differences may influence the effectiveness of each approach.

Implications: This study will provide insights into pedagogical practices on how to structure word learning sequences and optimize the integration of phonological and semantic aspects in this process.

 ${\bf Keywords:}\ {\bf Word}\ {\bf learning},\ {\bf Learning}\ {\bf Mechanisms},\ {\bf Kindergarten},\ {\bf Intervention}$

The developmental trajectory of transposed-word effects

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We examined the developmental trajectory of transposed-word (TW) effects by testing 3 groups of children and one group of adults. TW effects were measured by comparing the accuracy in classification of two types of ungrammatical word sequences: TW sequences (e.g., "You that read wrong again") compared to control sequences (e.g., "You that read wrong mouse") in a grammatical decision task (is this sequence of words grammatically correct or not?). The children were selected from the three cycles in the French educational system that covers primary education and early secondary education. We found a significant increase in TW effects between cycle 2 (grades 3 & 4) and cycle 3, between cycle 3 and cycle 4 (grades 5 & 6) that remained stable thereafter (i.e., adult participants did not show significantly greater effects than cycle 3 children). We interpret these findings as reflecting a gradual increase in children's ability to process more than one word at a time, hence facilitating sentence and text reading and generating the observed pattern in transposed-word effects. A further important result of the present study, obtained with a large cohort of children (N=770), is the strong correlation we observed between the reading fluency measure of the French adaptation of the SLS-Berlin test and response times (RTs) to correct sentences in the grammatical decision task. This provides important support for the use of the grammatical decision task in examining sentence processing in beginning and skilled readers.

Keywords: Transposed, word effects, Sentence processing, Grammatical decision task

Identifying newcomer children at risk of reading failure in French

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Newcomer children often face challenges in developing decoding skills due to various factors, such as a lack of prior schooling or limited exposure to Latin-based orthographies. They receive instruction in dedicated newcomer education programs, where they acquire French language skills. Among these children, some may also present with dyslexia; however, no standardized tools currently exist to assess their risk of developing a reading disorder. Implementing such tools would allow for early identification and intervention through speech therapy, rather than delaying support for a year or more until specific difficulties become evident. Studies show that phonological awareness, rapid automatized naming, nonword repetition, as well as visualverbal PAL, can predict future decoding skills in both monolingual and additional language learners. However, it does not seem a priori appropriate to use standardized tests based on those given to native French speakers because we do not know if newcomer children will perform similarly when we control for age or grade level. This research aims to fill this gap by comparing how 157 newcomer children and 165 monolingual French-speaking children performed on reading predictors tests. The newcomer children were recruited in primary schools and matched based on how long they had attended primary school in France. Predictors were significantly correlated to reading skills in both groups and indicated that the tests chosen were relevant for the purpose of predicting reading scores. However, the newcomer children scored lower on all reading predictors except nonword repetition. This suggests that using a standardized test based on monolingual children might lead to overidentification of newcomer children who are at risk of having a reading disorder. Therefore, we should create specific tests and norms for newcomer children.

Keywords: newcomer, reading predictors, French, children

Effect of aging on lexical competition : preliminary results

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It is well established that when listeners hear a word, phonologically similar words are activated and compete for recognition. Most of models of spoken word recognition posit that this lexical competition principle constitutes a key mechanism of word recognition. However, research on lexical competition has mainly focused on young adults, and to date, very few studies have examined the impact of aging on this process. In this study, we filled this gap by examining whether and how the competition effect classically found with the phonological priming paradigm modulates as a function of aging. Young adults (n = 40; mean age = 21) were 22 ms slower in a lexical decision task when target words were preceded by a competitor prime (e.g., famine \famin\ "starvation" - famile \famij\ "family") in comparison to a control prime (e.g., limace \limas\ "slug" - famile \famij\ "family"), thus replicating the classic inhibitory phonological priming effect. Preliminary results showed that older adults (n = 20; mean age = 66) responded more slowly than young adults did, as typically observed. Crucially, however, older adults exhibited an inhibitory priming effect of similar magnitude (33 ms) to that observed in young adults, and thus no modulation of the competition effect as a function of age was observed. Hence, despite general age-related slowing, our results, if confirmed by a larger pool of participants, will contribute to the few studies showing that lexical competition process is rather resilient to aging (see Hunter, 2016).

Keywords: spoken word recognition, lexical competition, phonological priming, aging

Impact of word presentation modality during vocabulary learning. A study in Low SES French Schools

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Children from low socioeconomic status (SES) backgrounds often present lower levels of vocabulary compared to their peers from higher SES backgrounds, leading to constrained vocabulary development and compromised reading skills (Hoff, 2006). This study investigated the impact of word presentation modality (oral vs. visual) during vocabulary learning. We examined the encoding and lexicalization (i.e., consolidation in terms of lexical integration) of newly learned words in children from low-socioeconomic status (SES). Based on the orthographic facilitation effect (Ricketts et al., 2009) and the two-stage model of word learning (Davis & Gaskell, 2009), we hypothesized that the presentation modality would differentially affect performance across immediate and delayed test sessions. The participants were 100 children (ages 9-11) from five classes in two French schools, assigned to either an oral-exposure condition (Oral group) or visual-exposure condition (Visual Group) with a written support. Word learning was assessed immediately after exposure and again one week later using two tasks: an Orthographic Lexical Decision task and a Phonological Lexical Decision task. Mixed-effects logistic models were applied to analyze response accuracy. In the Orthographic Lexical Decision task, the Visual Group significantly outperformed the Oral Group (p = .043); no interaction with session or session effects were found. In the Phonological Lexical Decision task, the results revealed a significant interaction between group and session (p = .005). Importantly, the Visual Group outperformed the Oral Group with a stronger effect observed in the delayed session. This highlights the specific benefits of orthographic support for word learning, especially in terms of long-term lexical integration. These results support the potential benefits of using orthography when teaching vocabulary to children from low-SES backgrounds.

Keywords: Vocabulary acquisition, Socioeconomic Status, Word Processing

Talk session 4

When grammatical gender shapes perception and when it does not: behavioural and neural evidence from simultaneous bilinguals

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Purpose: Previous research demonstrates that linguistic categories, including grammatical gender, can shape categorisation and perception, indicating a strong language-cognition link. While prior studies largely examine sequential bilinguals with a gendered L1 and genderless L2, less is known about how perception of bilinguals with two gendered languages is modulated by such grammatical properties. This pre-registered study investigated how two partially contrasting grammatical gender systems flex perception in simultaneous Ukrainian-Russian bilinguals, through behavioural and neural (ERPs) measures.

Method: Participants completed a non-verbal categorization task (Sato et al., 2020), judging associations between grammatically gendered but conceptual neutral primes and triggers (male/female faces). Stimuli were categorized into four conditions based on congruency of primes' grammatical gender and targets' biological sex: (1) congruent in Ukrainian and Russian, (2) incongruent in both, (3) congruent in Ukrainian/incongruent in Russian, (4) congruent in Russian/incongruent in Ukrainian. EEG data were recorded to assess N1, P2/VPP, N300 components, and early gender discrimination effects. Reaction times and accuracy were also analysed.

Results: For primes matching gender in Ukrainian and Russian, behavioural data showed only near-significant gender effects. However, for mismatching primes, L1 language dominance significantly affected accuracy. ERP analyses revealed no significant modulations of N1, P2/VPP, or N300 components by grammatical gender. Notably, grammatical gender effect on early gender discrimination emerged at 45–80 ms post-trigger.

Conclusions: Our findings suggest that two partially contrasting grammatical gender systems do not independently modulate early perceptual effects in simultaneous bilinguals in this particular task. Implications for neo-Whorfian research and differences between effects on simultaneous and sequential bilinguals are discussed.

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Keywords: linguistic relativity, grammatical gender, simultaneous bilingualism, language dominance, language proficiency

The processing of French gender-fair forms in reading: An eye-tracking study

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Purpose: Over the last decades, gender-fair forms have become increasingly used by individuals and by official institutions. In the French-speaking sphere, politicians, linguists, and other stakeholders have sometimes claimed that these forms would render texts illegible and inaccessible to the greater public. However, the processing of gender-fair forms in reading has been the topic of few empirical studies, especially using eye-tracking. The aim of the present study is therefore to investigate the processing of masculine forms (*voisins*), complete double forms (*voisines et voisins*), and contracted double forms (*voisin·es*).

Method: In the reported study, native French-speakers' (n = 58) eye-movements were monitored while they read short texts which included the above-mentioned forms, or nouns of similar length and NP structure used as control items.

Results: Consistent with previous findings (Gygax & Gesto, 2007), the complete double forms were not more costly to process. However, our results contrast with the only previous eye-tracking study (e.g., Girard et al., 2022). In fact, we found that contracted double forms led to increased processing costs in intermediate and late stages of processing, while having no effect on early stages of processing. Our data also indicate that the processing of contracted double forms becomes easier over time, and that it is facilitated by positive attitudes towards genderfair language.

Conclusion In sum, we found increased processing costs for contracted double forms but not for complete double forms. These novel findings enlighten the current debate and should be considered in the elaboration of official guidelines regarding gender-fair language.

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Gygax, P., & Gesto, N. (2007). Féminisation et lourdeur de texte. L'Année psychologique, 107(02), 239. https://doi.org/10.4074/S0003503307002059

Keywords: French, gender, fair language, masculine generics, reading, processing cost, eye tracking

Mental Gender Representation Elicited By Dutch Gender-Neutral Pronouns For Generic Reference

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Purpose: In many languages, masculine forms are used as the default for generic reference (i.e., reference to a person whose gender is unknown or irrelevant). Experimental research has shown that masculine forms can lead to male bias (e.g., Redl, 2021) and that gender-inclusive language can attenuate such bias (e.g., Lindqvist et al., 2019). This study investigates whether Dutch gender-neutral pronouns can mitigate a male bias and lead to more gender-inclusive mental representations.

Method: Participants from Belgium and the Netherlands were asked to read employee guidelines. They were randomly assigned to one of five text versions, which were identical except for the generic referential strategy used: gender-neutral *die-hen-hun*, gender-neutral *hen-hen-hun*, gender-neutral *die-die-diens*, masculine *hij-hem-zijn* or plural *ze-hen-hun*. After reading, the participants were asked to imagine an employee and write a short text about them. The gender the participants assigned to their imagined employee by the use of names and pronouns was taken as the outcome variable.

Results: The data suggest a male bias among the Dutch participants: they are more likely to imagine a male employee than a female employee regardless of the referential strategy they read. Among the Belgian participants, the male bias is less pronounced, and gender-neutral pronouns lead to more balanced gender representations. Participants' gender also influenced the results, with men more likely to write about male employees and women showing more balanced representations.

Conclusions: Gender-neutral pronouns have the potential to reduce male bias in mental gender representations, but their effectiveness varies by country and participant gender.

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Lindqvist, A., Renström, E. A., & Gustafsson Sendén, M. (2019). Reducing a Male Bias in Language? Establishing the Efficiency of Three Different Gender-Fair Language Strategies. Sex Roles, 81(1–2), 109–117.

Keywords: gender, neutral pronouns, gender, inclusive language, male bias, Dutch

The role of word ending and object association in gender assignment to novel words

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In Italian, -a and -o word endings represent reliable cues to feminine (F) and masculine (M) grammatical gender, respectively. English loanwords, which often end in consonants (-c), tend to be assigned the gender of their closest L1 equivalent or a "default" M, but initial variability is sometimes observed. This study investigates the effects of word ending and of the gender of the translation equivalent on gender assignment by Italian speakers during first exposure to novel words.

We designed an experiment with images of inanimate objects (N=90 F, 90 M) and non-objects (N=90) randomly associated with nonwords ending in -a, -o, or -c. Participants uttered a short sentence - "è un/è una..." followed by each nonword, thus assigning them gender. Preliminary results (N=16 of 50 expected) show that L1 Italian speakers often default to M, the least-marked option, but tend to assign F to words ending in -a. Nouns ending in consonant tend to be assigned M but are more likely to be assigned F when associated with a F object, compared to words ending in -o (z=-3.80).

In line with previous research on the weight of gender cues in gender assignment (Pérez-Tattam et al., 2019), these findings confirm the predominant effect of word ending, along with a moderating effect of the equivalent object's gender. Replication studies with L1 French- and L1 Dutch-L2 Italian speakers will explore the cross-linguistic effects of gender congruency and proficiency. We expect: a) an interference of L1 objects' gender on gender assignment and onset times; b) a stronger impact of word endings for more proficient L2 Italian speakers, due to familiarity with its cue patterns.

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Keywords: Gender assignment, gender cues, gender transparency, crosslinguistic influence, default gender

The (non)-verbal conceptualization of location across languages: Insights from two memorization tasks with eye-tracking

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Languages vary on how they encode location with, for instance, Dutch obligatorily encoding the orientation of the located object (e.g. *de fles staat op tafel* 'the bottle **stands** on the table') (1, 2, 3). Those linguistic differences result in different conceptualizations of a same locative event (4).

This presentation presents the results of two memorization tasks involving eye-tracking which tease apart verbal and non-verbal conceptualizations of location in French, English, and Dutch. 187 participants were shown locative events involving varying orientations (e.g., a bottle lying down and then standing up) and asked to determine whether they had seen the event before.

In the non-verbal condition, when verbalization was blocked, results show that Dutch speakers are more attentive to orientation changes, as evidenced by both their memorization scores and eye movements, which foreground more orientational scanning compared to English and French speakers. In the verbal condition, when verbalization was bolstered, results confirm the typological preferences and show an interesting shift for English speakers who surprisingly pay more attention to orientational features. We offer a typological explanation for this finding which *a priori* indicates that their linguistic encoding only partially affects their conceptualization, contrary to French speakers who do not pay more attention to orientation in the verbal condition.

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3 Lemmens, M., & Slobin, D. I. (2008). Positie- en bewegingswerkwoorden in het Nederlands, het Engels en het Frans. Verslagen en Medelingen van de Handelingen van de Koninklijke Academie voor Taal- en letter- kunde, 118(1), 17–32.

4 Lesuisse, M. & M. Lemmens. (2023). Looking differently at locative events : the cognitive impact of linguistic preferences. *Language and Cognition*, 1-29.

Keywords: memorization, cross, linguistic variation, location, conceptualisation, typology

Talk session 5

Gesturing towards Fluency: The Impact of Co-Speech Gesture on L2 Speech Fluency

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Despite its ubiquity, the rationale behind why speakers gesture remains ambiguous. While Rauscher et al. (1996) found that gesture reduces the number of disfluencies, suggesting that gesture has a self-directing function, Casasanto and colleagues (2022) found no such evidence, leaving gesture's function in speech unresolved. Therefore, this study examines whether co-speech gesture enhances speech fluency.

Four hypotheses, based on previous research, were tested in two experiments: (1) speakers produce fewer disfluencies when gesturing, (2) gesture decreases speech length, (3) disfluencies co-produced with gesture are shorter than those without, and (4) gesture decreases the average duration of disfluencies. In the first experiment (January 2023), three adult L2 speakers recounted two silent cartoons under gestural and non-gestural conditions. To achieve a gesture-free condition, the participants held a box. The results of the experiment confirmed all four hypotheses. However, the participants gestured a lot when holding the box. Therefore, a second experiment was conducted to investigate whether the results would become more significant when gesture was completely blocked.

The hypotheses were maintained in the second experiment (January 2024), involving 21 participants. A stick replaced the box to block gesture. Observations indicated that (1) speakers produce fewer disfluencies when gesturing, (2) disfluencies co-occurring with gesture are shorter, (3) average duration of disfluencies decreases with gesture, and (4) the disparity between the two gesture conditions is larger in the second experiment compared to the pilot. However, gesturing did not shorten overall speech duration, refuting hypothesis 2. These findings provide evidence that gesture facilitates speech fluency, offering new insights into how gesture supports speech production. My current PhD proposal aims to address this relationship in greater depth.

Casasanto, Dijkstra & Jescheniak (2022). Does gesture facilitate lexical retrieval? Cognition, 215

Rauscher, Krauss & Chen (1996). The role of lexical gestures in word retrieval. Psychological Science, $226{-}231$

Keywords: co, speech gesture / speech production / (dis)fluency / L2 speakers

The Impact of Perceptual Rhythm on Speech Production

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Prior exposure to rhythmic auditory stimuli -known as rhythmic priming- can influence speech perception and production, affecting speech rate and naming latency (Jungers & Hupp, 2018; Zhang & Zhang, 2019). People with Parkinson's disease (PD) exhibit speech production deficits, particularly in prosody, leading to a monotone speech pattern and rhythmic disturbances, even when speech impairments remain subtle (Lowit et al., 2018). While rhythm-based interventions improve motor behaviors in PD, the impact of rhythm on speech production remains understudied (Koshimori & Thaut, 2018).

We used a rhythmic priming paradigm where participants read sentences preceded by a prime either regular (R), irregular (IR), or silence (S). R and IR primes consisted of the same number of beats, but only R was structured into regular rhythmic groups, mirroring the sentences' prosodic structure.

Speech and articulatory rates showed no significant effect of prime or group. Prime type significantly influenced speech initiation in controls and in PD participants. The R prime led to faster speech initiation than IR and S.

Future analyses of additional aspects of speech production, specifically rhythmic metrics and prominence production, will help us better understand how rhythm influences speech production.

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Koshimori, Y., & Thaut, M. H. (2018). Neural mechanisms underlying rhythm-based neurorehabilitation in PD. Ageing Research Reviews, 47, 133–139.

Lowit, A., et al. (2018). Rhythmic performance in hypokinetic dysarthria. Journal of Communication Disorders, 72, 26–39.

Zhang, N., & Zhang, Q. (2019). Rhythmic pattern facilitates speech production: An ERP study. Scientific Reports, 9(1), 1–11.

Keywords: Parkinson's disease, Prosody, Rythmic priming

Rhythmic accommodation between speakers as Bayesian causal inference

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Purpose: During interactions, it is known that some aspects of the speaker's speech, such as formant frequencies, converge towards those of the interlocutor; a phenomenon known as "accommodation". Different accounts of this phenomenon have been suggested in the literature, focusing on its social and communicative role but also revealing sensory-motor interplay. The focus of this work was on rhythm accommodation. By proposing a new computational model, we aimed to better understand rhythmic accommodation in a Bayesian framework.

Method: We developed and compared a series of computational Bayesian models of accomodation. We considered multimodal fusion and causal inference approaches (Ma et al., 2023) to model how speakers accomodate their speech rhythm to another speaker, in turn-taking and repetition. We assessed the ability of these models to account for existing experimental data (Späth et al., 2022).

Results: Overall, the causal inference model was the best-fitting. Furthermore, simulation results showed that the best-fitting parameter values were different for the turn-taking and repetition tasks, which is in line with experimental observations (Späth et al., 2022).

Conclusions: To the best of our knowledge, we provide the first computational model to account for rhythmic accommodation effects. Our results suggest that causal-inference modeling is a relevant computational framework for explaining accomodation. Our model could be expanded to study rhythmic priming effects in general, where rhythmic but non-speech stimuli are used.

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Keywords: Speech production, Bayesian modeling, rhythm
Word stress: A magnet for beat timing in audiovisual speech perception

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Purpose: Beat gestures, simple up-and-down hand movements, are typically aligned with prosodic structures. They function, for example, to cue the location of lexical stress. Here we asked about the reverse: is there an auditory effect on the visual perception of beat timing? Such an effect would constrain theories of audiovisual integration.

Methods: Three experiments were conducted, using minimal disyllabic pairs of lexical stress in Dutch. In Experiment 1, 21 participants first watched videos with various levels of asynchrony between the pitch peak in a stressed syllable and the apex of a hand beat. They then needed to indicate the timing of the beat apex during an audio-only replay. The difference between the perceived and actual beat timing was calculated. Experiment 2 was a 2-alternative forced-choice (2AFC) task. Twenty participants watched videos of one minimal pair (VOORnaam – voorNAAM) with various steps of auditory cues to lexical stress and various steps of beat apex timing falling between the word's two pitch peaks. They needed to indicate on which syllable they perceived the beat apex. We divided participants into two groups in Experiment 3 (a recalibration paradigm; ongoing). One group was exposed to gestures arriving earlier than the stressed syllable, the other to gestures arriving later than that. In the testing phase, the same stimuli with ambiguous beat timing were used for both groups. We expect participants to learn the gesturing pattern of the talker and the former group to perceive more stimuli as having initial stress than the latter group.

Results: Experiments 1 and 2 revealed that the perceived timing of beat apices is shifted towards the stressed syllable, hence an auditory effect on the perception of beat timing.

Conclusions: This study provides new evidence for auditory influences on visual perception, demonstrating audiovisual interaction between speech-related signals in everyday face-to-face communication.

 ${\bf Keywords:}\ {\rm audiovisual\ speech\ perception,\ temporal\ processing,\ beat\ gestures}$

Semantic Accent in Bicultural Bilinguals: Investigating Conceptual Representations through Lexical Processing

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Over the last decades, various models have been proposed to explain the mechanisms of conceptual processing in bicultural bilinguals. Among these, the Shared Distributed Asymmetrical Model (Dong et al., 2005) proposes that bilinguals have partially overlapping yet asymmetrically distributed conceptual representations for their two languages: initially, L2 words only map onto L1-based conceptual representations - a phenomenon known as "semantic accent"; then, as proficiency and cultural exposure increase, the L2 lexicon would progressively link more to conceptual representations specific to the semantics and culture of the L2.

The present study aims at testing this assumption by running a primed lexical decision task in participants' L2, following previous research on the same topic (Matsuki et al., 2020; Pan & Jared, 2021). Primes will be paired with three types of target: a) semantically-related in L1 but not in L2; b) semantically-related in L2 but not in L1; c) semantically-related in both languages. Prime-target association will be measured in terms of semantic similarity within vector semantic models in R (Günther et al., 2015). Non-words and semantically-unrelated targets will be included as fillers.

Participants will be Italian monolinguals (control group), and bilinguals (English-Italian, Italian-English, Egyptian Arabic-Italian), with different levels of proficiency and cultural exposure.

We expect bilinguals' performance to become increasingly similar to that of monolinguals and to show a decreasing priming effect on the target related to their L1, as their proficiency and cultural exposure to the L2 increase.

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Keywords: semantic accent, conceptual processing, bilingualism, bicultural bilingualism, word processing

Talk session 6

Structural priming as a means of learning a new grammatical structure? Priming for transitives in Dutch learners of French

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This study examines whether Flemish students can learn the French (L2) passive through structural priming-the tendency to repeat grammatical structures. We conducted a between-language (L1-L2) experiment with 50 Flemish secondary school students without prior exposure to the French passive. Participants described pictures (24 items) in French after hearing a Dutch prime: an active, a passive, or a baseline sentence. Notably, Dutch and French passives use different auxiliary verbs: worden ("to become") and être ("to be"), respectively. Midway through the experiment, we implemented a within-language intervention block of four French passive primes containing the same verb as the target. As hypothesized, no passives were produced before the intervention. Afterward, only a few participants formed passive sentences. Nevertheless, the intervention had a significant effect on overall passive production, and there was marginally significant passive priming. Additionally, L2 proficiency correlated positively with passive production, suggesting that a lexically-based intervention may help sufficiently proficient L2 speakers develop abstract syntactic representations. To complement these findings, we conducted the same experiment with only French primes, since Hartsuiker & Bernolet's (2017) developmental account predicts that within-L2 priming precedes cross-linguistic priming. However, there was no passive priming and only a marginally significant intervention effect, with worse passive production and comprehension than in Experiment 1. Our results suggest that learners must first understand L2 syntactic structures before they can be primed to produce them.

Reference:

Hartsuiker, R. J., & Bernolet, S. (2017). The development of shared syntax in second language learning. Bilingualism: Language and Cognition, 20(2), 219-234.

https://doi.org/10.1017/S1366728915000164

Keywords: syntactic priming, passive, comprehension, L2 syntax

Activation of plausible alternatives in negation processing

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Purpose: Capuano et al. (2021) demonstrated that English-speaking adults produce plausible alternatives more frequently in sentences with constituent negation (a) than in affirmative statements (b), attributing this polarity effect to the negator: (a) Negative-BUT: I see no goat, but I see _____ (e.g., a lamb)

(b) Affirmative-AND: I see a goat and I see _____ (e.g., hills)

We conducted two studies with German-speaking adults. Study1 replicated Capuano et al.'s (2021) method. Study2 introduced an additional *negative-AND* condition ("I see no goat and I see _____") to disentangle the effects of negation from those of the connector's pragmatic properties.

Method: Native German speakers (N1: 108, mean age: 31 years, range 19-72; N2: 99, mean age: 38 years, range 20-73) completed sentence fragments with a noun phrase they believed suited best the given context. Responses were analyzed in terms of the proportion of co-hyponyms (i.e., plausible alternatives) relative to other semantic categories. Additionally, we assessed semantic similarity between stimulus nouns and participant responses using scores from the de_wiki semantic space.

Results: Study1 confirmed the polarity effect with participants produced significantly more co-hyponyms in the *negative-BUT* condition than in the *affirmative-AND* condition (p < .001). Free associations, by contrast, were more frequent in the affirmative condition. Study2 showed that semantic similarity scores in the *negative-AND* condition resembled those in the affirmative condition but differed significantly from the *negative-BUT* condition.

Conclusions: We replicated the polarity effect of Capuano et al. (2021). Interestingly, our findings suggest that the found effect may result from an interplay of negation and pragmatic properties of the connector, highlighting the need for further investigation.

References:

Capuano, F., Dudschig, C., Günther, F., & Kaup, B. (2021). Semantic similarity of alternatives fostered by conversational negation. *Cognitive Science*, 45(7).

Keywords: negation processing, alternatives activation, plausible alternatives

The Interplay of Attention and Awareness in Acquiring Low Communicative Value Syntactic Structures in SLA

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Purpose: Research in Second Language Acquisition (SLA) shows that learners must attend to a form for it to be acquired. Some theories emphasize conscious noticing (e.g., Schmidt, 1993), while others state that it's *processing* and not necessarily explicit information that drives acquisition (e.g., VanPatten, 2020). This study explores how attention and awareness interact and affect the acquisition of syntactic structures with low communicative value.

Method: Naïve German learners were trained to read simple transitive sentences with and without subject-verb inversion. Three groups received different degrees of implicitness: one with explicit metalinguistic information, another prompted to look for patterns in the stimuli, and a third only instructed to read for comprehension. Learning was assessed through a grammaticality judgment task (GJT) and a production task. Eye-tracking measured attention, while verbal reports and confidence ratings during the GJT measured awareness.

Results: Preliminary observations suggest that awareness of the target structure does not affect verb attention. Learners without metalinguistic information struggled with the grammaticality judgment task but displayed knowledge of inversion during the production task.

Conclusions: Explicit information did not enhance comprehension processing but contributed to learning durability. All groups demonstrated some learning, with the explicit instruction group maintaining gains over time, followed by the prompted group. These results inform the role of explicit information in SLA and implications for teaching materials aimed at novice learners.

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Schmidt, R. (1993). Awareness and Second Language Acquisition. Annual Review of Applied Linguistics, 13, 206–226. https://doi.org/10.1017/S0267190500002476

VanPatten, B. (2020). Input Processing in Adult L2 Acquisition. In B. VanPatten, G. D. Keating, & S. Wulff (Eds.), *Theories in Second Language Acquisition* (3rd ed., pp. 105–127). Routledge. https://doi.org/10.4324/9780429503986-6

Keywords: second language acquisition, input processing, low communicative value structures, L2 German, word order

Using presupposition resolution and illusions of coherence to research memory mechanisms

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Syntactically inaccessible distractors can interfere with dependency resolution due to illusions of grammaticality. However, few studies have looked beyond the sentence-level. If discourse cues rely on similar memory mechanisms, coherence illusions might elicit comparable effects. For instance, "John bought apples, but he bought no pears. Later, he again bought pears." is incoherent as 'again' presupposes a prior instance of buying pears. Nonetheless, it does activate 'pears' in memory which could elicit incorrect retrieval of 'pears' to resolve this, creating a coherence illusion.

To find empirical evidence for this, we present an eye-tracking-while-reading experiment using short discourses with the presupposition trigger 'again'. The sentence preceding the trigger sentence offered two candidate antecedents: a target accessible for resolution and a distractor inaccessible due to negation. Orthogonally, these objects were a lexical match or mismatch with the object following the trigger. Stimuli were presented in Dutch to typical adults (N = 46) in a Latin-square design and pre-tested using an Acceptability Judgement Task (N = 57).

Bayesian analyses of eye-tracking results showed that matching distractors elicited shorter reading times (RTs) overall, providing evidence for coherence illusions. The cue-based retrieval account by Lewis & Vasishth (2005) would explain such coherence illusion effects for matching distractors in target-mismatch conditions as facilitatory interference. However, it would predict longer rather than shorter RTs in target-match conditions (inhibitory interference) as activations spreads to both lexical matches. Strikingly, acceptability results did show indications of inhibitory interference (lower ratings) but provided no evidence of coherence illusions or facilitatory interference.

We speculate that the effect of discourse coherence illusions on memory mechanisms might differ from grammaticality illusions. A comprehensive explanation of discourse coherence illusions may require integrating multiple theoretical perspectives on language, memory, and discourse, providing a foundation for future research.

Lewis, R. L., & Vasishth, S. (2005). Cognitive science.

Keywords: eyetracking, presuppositions, memory retrieval, discourse processing, coherence illusions

Language Dominance and Cognitive Processing: A Study of the Mising Language in Assam

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Mising language, spoken by the Mising community in Assam, is one of the smaller languages of the region, facing endangerment due to dominance of the larger languages, like Assamese. This Tibeto-Burman language is spoken in close in-group scenarios and is gradually losing ground to the dominant languages, partly also due to the education set-up where schools use only dominant languages as medium of instruction. When bilingualism is a part of life, language shift to the dominant language (often the second language) becomes inevitable. This is reflected in their relative abilities in language processing as well. This study investigates the cognitive effects of voluntary and cued language switching, focusing on reaction times (RTs) and the role of bilingual experience. Using a picture-naming task, we collected behavioural data from Mising-Assamese bilinguals in Jorhat and Tinsukia, Assam. Participants (N=80; Mean age=27.68, SD=5.73) completed single-language, voluntary, and cued switching blocks, with RTs analyzed using linear mixed-effects models. The two field areas, Jorhat and Tinsukia, had slightly different relative dominance of L2 (Assamese). Results revealed significantly slower responses in the Mixed Cued condition, indicating higher cognitive demands. Participants in Tinsukia responded faster than those in Jorhat, suggesting regional differences in language exposure or proficiency. Participants responded faster to Mising cues than Assamese cues, highlighting potential language dominance effects. These findings suggest that voluntary switching may be less cognitively demanding than cued switching, supporting models of adaptive language control. Thus, depending on both region of origin and language switching paradigm, reaction times might differ, suggesting differences in language skills and cognitive effort.

Keywords: Language dominance, Language switching, Cognitive control, Language processing

Poster session 1

The impact of home-based activities on the written language skills of second- and third-grade children

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Teachers lack appropriate tools to identify written language difficulties in pupils. In this context, the "PERLE" test was developed to assess written language skills in second- and third-grade children. Additionally, certain activities, such as reading or playing games, are believed to promote the development of written language, whereas screen exposure may have a negative impact (Peiró-Velert et al., 2014; Desrochers et al., 2009; Xu & Gao, 2021; Miller et al., 2022). To the best of our knowledge, no study has yet investigated the relationship between home-based activities and written language skills.

This study pursued two objectives: first, to complete the validation of the PERLE test and improve its psychometric properties through various data collections; second, to examine the relationship between home-based activities and the development of written language, as measured by the PERLE test. The study involved 268 second- and third-grade children from northern France. The PERLE test was administered to the pupils, and their parents completed a questionnaire about home activities (including touch-screen tablets, phones, television, board games, manual games, video games, and reading).

First, statistical analyses of the test results confirmed the improved psychometric properties of the final version of the PERLE test. Correlational analysis then revealed that the more children read, the better their PERLE test score was. Conversely, exposure to screen-based activities was associated with reduced engagement in other activities that are beneficial to the development of written language. These results can be used to tailor parental guidance and early prevention strategies to support children's reading and writing development.

Keywords: Written language, Reading, Home-based activities, Screen exposure, Early prevention

No observed link between individual differences in multilingual language experience and behaviourally measured inhibitory control in young adults

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Purpose: The impact of bi-/multilingualism on neurocognition remains debated, with studies reporting both positive and null effects (e.g., Bialystok et al., 2004; Paap & Greenberg, 2013). A key challenge lies in how language experience is measured, as it is often reduced to a binary distinction, potentially masking its nuanced effects. Recent research suggests that individual variation within multilingual language experience shapes neurocognitive adaptation, modulating both its manifestation and degree (DeLuca et al., 2020). Therefore, the present study aimed to examine individual differences in multilingual experiences by considering language experience as a continuous measure.

Method: 60 bi-/multilingual individuals (ages 18-59) with diverse language backgrounds completed a Flanker task to assess inhibitory control, and a questionnaire on language experience to capture multilinguistic language diversity (MLD), and balanced language use (Li et al., 2020). Data were analysed using a linear mixed-effects model, with reaction time as the dependent variable, and an interaction between condition (congruent vs. incongruent) and MLD as the independent variables.

Results: Neither MLD nor measures of balanced language use had a significant effect on task performance. To control for potential effects within a more linguistically homogeneous group, all analyses were also conducted on a subset of French-English speakers (n = 23). However, results remained consistent.

Conclusion: No significant effects of multilingual language use were observed on task performance. However, this could be due to the nature of the tasks used, as fMRI studies suggest that while multilingual experience influences neural processing, these changes do not always translate to behavioral task performance (DeLuca et al., 2020). Moreover, it is argued that multilingualism contributes to the cognitive reserve, with behavioural effects becoming more detectable at later ages when cognitive ageing progresses (Bialystok, 2021). Future research should incorporate neurophysiological measures and tasks with greater cognitive demands to better assess potential multilingual-related adaptations.

Keywords: Bi, /multilingualism, Multilingual language experience, Cognitive adaptations, Inhibitory control, Behavioural Flanker task

Assessing the usefulness of ASR-generated captions in an educational context with L2 speakers of English

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Purpose: We report on a study aimed at assessing the effects of automatically generated captions in an educational setting. The increasing availability of captions generated via automatic speech recognition (ASR) systems raises the question as to whether these systems can be immediately assumed to be useful, or whether the presence of errors negatively impacts comprehension (Chan *et al.*, 2019). Previous research has indicated that providing graphical features in the text of captions (e.g., colored words) about the confidence levels of ASR systems may enhance the reliability of users in ASR-generated transcriptions (Wald & Bain, 2008).

Method: Participants were 16 university students (L1 speakers of Italian, intermediate and high proficient speakers of English as an $L2/lingua\ franca$ - CEFR levels: B2-C1) who watched a 9-minute captioned lecture, and answered 10 comprehension questions, followed by a question-naire aimed at collecting their views and insights on the use of automatic captions. In addition, we examined whether different display formats (classic format versus three display formats with different colored markups) had an effect on comprehension.

Results: Whereas different display formats did not affect overall content comprehension, participants reported that the presence of errors in the captions was challenging and distracting, thus reducing the utility of having captions.

Conclusions: This study highlights the importance of providing accurate captions in L2 contexts and calls for further investigation into the topic using different methods, such as eye-tracking.

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Chan, S. C., Kruger, J.-L., Doherty, S. (2019). Comparing the effects of automatically generated and corrected subtitles on cognitive load and learning in a first- and second-language educational context. *Linguistica Antverpiensia, New Series: Themes in Translation Studies*, 18, 237–272. Wald, M., & Bain, K. (2008). Universal access to communication and learning: The role of automatic speech recognition. *Universal Access in the Information Society*, 6(4), 435–447.

Keywords: speech comprehension, automatic speech recognition, captions, L2 speakers of English

Uncovering the mental representation of one's own-voice

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Most people perceive their recorded voice (digital self-voice) differently from the voice they hear while speaking (natural self-voice). A reason often proposed for explaining this perceptual mismatch is that whereas natural self-voice perception relies on both air and bone conduction, digital self-voice perception relies on air conduction only (1). However, while previous studies have attempted to design acoustic modifications to improve one's own-voice identification, they have failed to identify one generalized filter and overlooked the importance of considering interindividual variability (2). In this study, we used a data-driven psychophysical procedure (reverse correlation) to probe the perceptual filters used by participants to recognize their ownvoice. First, we recorded the voices of 93 participants while uttering a simple syllable (a) and used a voice transformation toolbox to create hundreds of modified versions of their voices with time-varying filtering over several speech-relevant frequency bands. Participants then listened to 400 pairs of these modified voices and were instructed to choose the one that best resembled how they hear their voice while speaking. This allowed us to reconstruct the mental representations driving participants' perception of their own-voices. Our results suggest that, despite substantial interindividual variability, there is a generic filter used by listeners to recognize their natural self-voice. This filter is characterized by increased amplitude and frequency for formant F1, and increased amplitude for F2, F3, and F4. Overall, this finding might fuel a better understanding of the perceptual mismatch between bone-conducted and ear-conducted self-voice perception. We anticipate that improving self-voice identification will be useful for patients with communication disorders who need to use text-to-speech communication systems.

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Keywords: Self voice perception, Speech production, Reverse correlation.

Impacts of reading experience and selective visual attention on letter and non-letter position coding in beginning readers.

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Introduction: Reading requires identifying letters and coding their positions within a word. The transposed-letter effect claims that two sequences of letters are more similar when they contain transposed letters (JUDGE–JUGDE) than when these transposed letters are replaced by new letters (JUDGE–JUPTE). In pre-readers, this effect was found for letters and other visual symbols suggesting a general property of the visual system (1). However, with increasing reading experience, the effect seems to become stronger for letters (2). This observation could be related to selective visual attention that also develops with reading skill (3). Here, we investigate the development of the transposed-character effect and the role of selective attention at the initial stage of reading acquisition.

Method: The transposed-character effect was examined in 33 pre-readers and 30 beginningreaders (Grade 1) using a Same-Different Matching task on four-letter (forming words) and four-symbol sequences.

Results: First, all participants showed task sensitivity above chance, confirming that the task difficulty was suitable. Analyses of accuracy scores and reaction times revealed a transposed-character effect. The accuracy scores also showed a three-way interaction between the effect, reading level and type of stimuli, i.e., pre-readers showed a transposed-character effect only for symbols, while beginning readers showed the effect only for letters. Finally, the selective visual attention positively influenced the processing speed of letters without influencing the transposed-character effect.

Conclusion: Our results showed that the transposed-character effect become letter-specific as early as Grade 1. However, the presence of the effect in pre-readers only on symbols needs further investigation. Finally, although selective attention facilitated letter processing, there was no evidence that it contributed to the position-encoding mechanism.

References:

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(2) S. Massol et al., J. Exp. Child Psychol., 249, 106081 (2025).
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Keywords: reading acquisition, cognitive mechanism, transposed character effect, selective visual attention

Phonetic reductions in L2 acquisition: does perception improve with proficiency?

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In everyday speech, words naturally undergo variability, including the omission of segments – a process known as *phonetic reduction* (e.g., *library* (/'laıbr[ə]ri/) produced ('laıbri)). While native speakers effortlessly understand and produce these reductions, often without being aware of such variations, recent research (Mulder et al., 2015; Brand & Ernestus, 2018) suggests that L2 learners may struggle to perceive them. The present study seeks to expand this field of research by examining L2 learners' challenges in perceiving and processing phonetic reductions. We are currently conducting an ABX task with L1 French learners of L2 English with two varying proficiency levels (beginners vs. experienced learners). Participants are presented with three acoustic stimuli spoken by different voices: A (e.g., the reduced form), B (e.g., the full form), and X (e.g., the reduced form). Their task is to identify whether X is more similar to A or B. The aim of this study is twofold: (a) assess whether French learners of English can discriminate between full and reduced forms and (b) examine whether these two forms are stored in the mental lexicon or whether reduced forms are derived from the full forms. If our results show, as we expect, that experienced learners have more difficulty than beginners in discriminating between the two forms, this would suggest that only one form is stored in their mental lexicon and that more proficient learners are less sensitive to phonetic reductions. Results will be discussed during the conference.

References

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Keywords: phonetic reductions, second language acquisition, perception, mental lexicon

Tapping rhythmic priming of relative sentence processing in Italian-speaking-children

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According to entrainment theories, exposure to rhythmic priming enhances cognitive processing and attention, facilitating linguistic processing (Pryzyblyski et al., 2013; Fiveash et al., 2020). This effect can be strengthened by introducing a tapping motor component synchronising with the external rhythmic stimulus (Schmid, 2024).

Starting from these results, we investigated the effects of tapping rhythmic priming on sentence processing in six-year-old Italian-speaking children and compared them to sentence processing without tapping rhythmic priming.

During a picture selection task, children listened to 7 blocks of 5 relative clauses. For each sentence, two pictures appeared on the screen. Children had to indicate which picture represented the sentence's meaning. Each block included subject relative clauses, object relative clauses and passive relative clauses. Children were divided into two groups: at the beginning of each block, the first group (prime tapping group - PT) listened to a 32-second rhythmic track and were required to tap in time with their finger. The second group (no prime tapping group - NPT) was administered the sentence blocks without the rhythmic task.

Since object relative clauses are problematic for Italian-speaking children even at school age (Arosio et al., 2009) and rhythmic entrainment enhances sentence processing, we predict better rates of comprehension accuracy in the PT group than in the NPT group. Data collection is ongoing and will be completed before the conference.

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Przybylski L, Bedoin N, Krifi-Papoz S, Herbillon V, Roch D, Léculier L, Kotz SA, Tillmann B. (2013). Rhythmic auditory stimulation influences syntactic processing in children with developmental language disorders. Neuropsychology, 27(1):121-31. doi: 10.1037/a0031277. PMID: 23356600.

Keywords: language comprehension, rhythmic priming, children, italian, relative sentences

Online lexical decision screening tool for reading abilities: the effects of lexical properties in different age groups.

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Purpose: The Rapid Online Assessment of Reading (ROAR) is an online automated assessment battery for English pre-reading and reading skills with psychometric properties comparable to those of standardised tests for English (1). The Italian adaptation of the Lexical Decision task of the ROAR (ROAR-Word) shows promising results of overall validity and consistency in both adults and children. In this presentation we are going to explore the effects of the lexical properties of the tool in different age groups.

Method: Two samples (90 adults, aged 18-50 years; 663 elementary school children, aged 6-11 years) were tested on the Italian ROAR-Word. The task comprises 184 words and 184 pseudowords created on Wuggy (2) to match the lexical and sub-lexical features of the words, including item length, bigram frequency and orthographic neighborhood (OLD20). Accuracy and reaction times for ROAR-Word were collected, together with a series of standardised tests targeting reading and cognitive abilities.

Preliminary results: The effects found on ROAR-Word (RTs) for pseudoword length, word frequency, orthographic neighborhood replicated expected effects in the adult group (r=0.60, p< 0.001; r= -0.55, p< 0.001; r= 0.24, p< 0.001). Preliminary analyses on the sample of primary school children suggest age differences in the effects of these lexical properties.

Conclusions: ROAR-Word replicates the expected effects of a lexical decision task in Italianspeaking adult readers. Ongoing data collection on children will establish possible developmental trajectories of well-known lexical effects (e.g. item length, word frequency). The effect of less investigated lexical properties (e.g. word prevalence) will be examined in both groups.

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Keywords: lexical decision task, screening, reading abilities, lexical properties.

Cognitive Load on Semantic Prediction in L2 English Speakers

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Purpose: Prediction in language processing can be observed through eye movements in the visual world paradigm. Previous studies have shown a relationship between cognitive resources and predictive eye movements during language processing (Ito et al., 2017). This study investigates how semantic prediction in grammatically simple sentences is affected by cognitive load in L2 English speakers, using two different types of working memory tasks.

Method: This visual world eye-tracking study followed a 2x3 design, manipulating the sentence predictability (predictable, unpredictable) and the working memory load (control: no manipulation, visuospatial: remembering the location of four squares, phonological: remembering a list of five words). Thirty-nine L2 English speakers with a mean age of 26 participated in the experiment. The load manipulation trials proceeded as follows: participants were presented with a series of items to memorize. They then saw 4 objects, heard a sentence, and selected the best corresponding object. Finally, they recalled the previously memorized items. Control trials contained no memorization or recall task.

Result: Using a divergence point analysis, we found a significant effect of prediction in the control and visuospatial blocks, with significantly more fixations to the target compared to the distractor before target onset. In contrast, predictive gaze behavior in the phonological condition did not show a significant effect until after target onset, suggesting a lack of prediction in this condition.

Conclusion: We saw little evidence of predictive processing when L2 participants completed the phonological manipulation. We believe that the differences in predictive onsets suggest the involvement of two fundamentally different sets of mechanisms, rather than a more domaingeneral effect of cognitive load.

References:

Ito, A., Corley, M., & Pickering, M. J. (2017). A cognitive load delays predictive eye movements similarly during L1 and L2 comprehension. *Bilingualism Language and Cognition*, 21(2), 251–264.

Keywords: prediction, language processing, working memory, visual world, eye tracking

The Role of Semantic Similarity in Memory Retrieval

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Purpose. The fan effect is frequently used to study associative memory. In fan experiments, participants learn new associations between concepts by studying short sentences, e.g., *The hippie is in the park* (Anderson & Reder, 1999). The concepts used (e.g., *hippie*) appear in multiple sentences, creating an associative fan. These experiments typically focus on associations learned during the experiment. Instead, we tested pre-existing associations in natural language using semantically related stimuli from vector space models.

Method. We created lists of four semantically similar words using Word2vec and fastText models trained on Dutch data. In an online fan experiment, Dutch L1 speakers (N=98) learned 24 sentences following the pattern *The person is in the location*. For the fan 2 condition, two similar words (e.g., *dokter* and *chirurg*) were selected from one list. For the fan 4 condition, four similar words were selected. Words in different lists were dissimilar. The fan condition only varied for one of the categories (person or location) while it remained at fan 2 for the other. In a subsequent retrieval task, participants distinguished target sentences from foils via button press.

Results. We fitted Bayesian generalized linear mixed models to analyze accuracy and reaction times (RTs). Higher fan conditions (fan 4 vs. fan 2) led to longer RTs and lower accuracy in the retrieval task.

Conclusions. Our findings extend fan effect research, demonstrating that activation spreads across semantically similar concepts in memory. The spread of activation leads to lower activation of a single concept which results in longer RTs and lower accuracy during its retrieval from memory. This supports the use of vector space models to quantify natural language associations.

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Anderson, John R., & Reder, L. M. (1999). The fan effect: New results and new theories. *JEP: General*, 128(2), 186–197.

Keywords: memory retrieval, semantic similarity, vector space models, fan effect, associative memory

Sensitivity to filler-gap dependency violations during bilingual comprehension

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Purpose: Resolving filler-gap dependencies (FGDs) requires both syntactic (gap identification) and semantic (filler integration) processes. Previous research found processing reflexes of these to be absent or delayed in non-native comprehension(1,2), supporting the claim that non-native comprehenders have difficulty establishing syntactically-mediated dependencies in real time(3). However, previous studies have typically compared groups of different individuals, and few studies have examined gap-identification and filler-integration processes separately. Using parallel experimental designs, our study systematically examines and compares bilinguals' sensitivity to syntactic and semantic FGD violations in their L1 and their L2.

Method: 40 L1 German/L2 English speakers (CERF level C1, range: B1-C2) participated in four self-paced reading experiments, two in German and two in English. Syntactic 'filled-gap' violations were created by inserting a superfluous resumptive constituent into the gap position (example 1, for English), and semantic violations by manipulating the filler's plausibility as an object of the subcategorizing verb (example 2).

(1) Martin helped the housewife $\{\text{while}/\text{*for whom}\}$ Laura was picking some

strawberries <u>for her</u> after the midnight.

(2) Sharon photographed the {bottle/#scientist} that the kind waiter opened $__$ in the restaurant.

Results: Reading-time analyses revealed significant filled-gap and plausibility effects in German. Filled-gap effects were absent in English, however, whilst semantic violations elicited a marginally significant effect only. Participants' sensitivity to FGD violations in the L2 was not modulated by their English proficiency.

Conclusions: Testing the same individuals in two languages, we observed absent or reduced sensitivity to FGD violations in their L2. Our results indicate that non-native comprehenders are more sensitive to a filler's semantic fit than to the availability of structural gaps, suggesting that FGD resolution is more semantically than syntactically driven in L2 but not in L1 processing.

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Keywords: filler, gap dependency violations, linguistic sensitivity, bilingualism, second language processing, sentence processing

Cross-Linguistic Syntactic Priming in L1 Turkish–L2 English Bilinguals: Investigating Eye-Movements and Production in Ditransitive Structures

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Purpose: Bilinguals often exhibit cross-linguistic syntactic priming, where short-term exposure to a syntactic structure in one language facilitates processing or production of similar structures in the other. Few studies examine structures that are grammatical in one language but ungrammatical in the other(2). However, these studies are inconclusive, likely because they assess only production, where participants may hesitate to produce ungrammatical structures. This study investigates cross-linguistic syntactic priming in both processing (eye movements) and production of ditransitive structures in Turkish-English bilinguals. While English allows double-object (DO) constructions without a dative marker "to" (e.g., *The director sells the boy a painting*), Turkish requires a dative marker, making DO ungrammatical. Our aim is to see whether eye tracking may reveal priming effects in processing that production alone might not detect.

Method. L1 Turkish – L2 English adult bilinguals complete an experiment where each trial has three phases. First, they read English ditransitive prime sentences in a self-paced reading task appearing in three conditions: (1) DO (*The director/sells/the boy a painting...*); (2) Canonical Prepositional-Object (Canonical-PO; *The director/sells/to the boy a painting...*); (3) Shifted Prepositional-Object (Shifted-PO; *The director/sells/to the boy a painting...*). Second, they view images with an animate recipient (e.g., woman) and an inanimate theme (e.g., umbrella), while their eye movements are recorded. Third, they produce Turkish sentences using the images, subject, and verb provided. We predict that priming will take place in processing (even with ungrammatical DOs), with participants looking more to the theme after Canonical-PO primes (theme-before-recipient), and more to the recipient after DO and Shifted-PO primes (recipient-before-theme)(1). However, in production, we expect participants to only produce Canonical-POs and Shifted-POs in Turkish, but no DOs. Data collection and analysis will be completed by the time of the conference.

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Keywords: Visual World Paradigm, cross linguistic syntactic priming, eye tracking, language processing and production

Predictability in L2 reading: No evidence in early measures

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Purpose: Research investigating predictability in L2 reading is somewhat limited, particularly when looking at skipping behavior. Skipping behavior provides important insight into prediction because it's assumed that readers skip words they have predicted. In this study we investigate L2 eye-movement behavior in terms of two early measures, skipping rate and gaze duration, and a later measure, total duration, of a critical word that was varied by length (4-12 letters in length) and predictability (either high/low predictability based on sentence context). Additionally, we investigated the role of L2 proficiency on these measures.

Method: We report an eye-tracking while reading study with L2 English speakers (n=56) using items designed to systematically investigate the effects of predictability and length on reading behavior(1).

Results: We found that skipping rate increased as word length decreased with no effect of proficiency, and both gaze and total duration increased with word length and with higher proficiency. Strikingly, we did not observe an effect of predictability on the early measures of skipping and gaze duration, but see an effect in total duration, with total duration increasing for unpredictable relative to predictable target words. We argue that L2ers can quickly process visual word length information outside of their central fixation (leading to effects in early measures), but not predictability information (leading to no effects in early measures). However, predictability effects emerge later (with increased total duration for unpredictable words) suggesting that L2ers rely more on bottom-up processing initially and integrate contextual information in later stages.

Conclusion: These findings indicate that, predictability information might not help L2ers immediately in early lexical access, but readers revisit and reprocess unpredictable words more often.

References: (1)Slattery et al. (2018). Word skipping: QJEP, 71(1), 250-259.

Keywords: predictability, skipping behavior, gaze duration, total duration

Are German particle verbs hard to process? A self-paced reading study

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It is supposed that German particle verbs like *aufbauen* (to set up), that occur with separated verb base and particle might cause reading and processing difficulties in German as a foreign language learners (Ahrenholz et al. 2017). To my knowledge, there is a lack of empirical evidence for this. This is where my study comes in. I suspect that not particle verbs themselves might cause reading and processing difficulties, but the kind and length of the intervening constituents. On the one hand locality effects could come into play (Gibson 1998). On the other hand, the intervening constituents could lead to anti-locality and predictability effects (Levy 2008, Konieczny/Döring 2003). To test the effects of different intervening constituents, I conducted a self-paced reading study with 32 German as a foreign language learners with at least B1 German skills and 32 German L1 speakers. Participants were asked to read 36 sentences phrase by phrase, that contained a separated particle verb in 4 different complexity conditions, i.e. the number and kind of constituents between verb base and particle differed. The data collection is still going on and will be finished by the end of February. The results should show if there are (a) differences between the two groups and (b) differences regarding the 4 complexity levels.

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Keywords: self, paced reading, particle verbs, German as a foreign language

Producing deceit: The impact of veracity during spoken and written language production

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The purpose of this study is to examine processes such as pausing, repetitions and repairs/revisions during real-time language production in speaking and writing in truthful and deceitful narratives. Studies have found a correlation between pauses and cognitive load (Goldman Eisler, 1968; Matsuhashi, 1981), and lies are reported to be cognitively demanding (Suchotzki et al., 2017). In a 2x2 experimental study, native Swedish speakers truthfully and deceitfully re-told events from 4 short films in speaking/writing. Spoken accounts were audio recorded and transcribed, and written accounts were collected with keystroke logging. A linear mixed effects model showed that veracity alone did not significantly affect the number of pauses. However, in the spoken narratives, longer deceitful texts contained fewer filled pauses compared to truthful texts. In writing, deception influenced the number of pauses so that longer texts had fewer pauses, but when the texts took longer to write, there were more pauses in deceitful compared to truthful narratives. To conclude, this study shows that there is a complex interplay between pauses and other measures of task complexity that needs to be teased apart further. The results are relevant for applied uses, such as forensic linguistics, but also for how we form theories on spoken and written language production.

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Keywords: keystroke logging, writing processes, speaking processes, cognitive processes, deception, lies

Language-mixing in CLIL education: Implications for recall of written input

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Purpose: Despite theoretical endorsements for incorporating both L1 and L2 in CLIL (Content and Language Integrated Learning) education, its practical implementation remains limited. This highlights the need for quantitative evaluation of how language-mixing influences learning outcomes. Previous studies on language-mixing and auditory recall show conflicting results (Antón et al., 2016; Anonymous, 2025), which are attributed to differences in participants' L2 exposure and proficiency. Additionally, these studies provide no evidence regarding other modalities or language-switching contexts. Therefore, the present study aims to address these gaps by exploring the impact of language-mixing on recall of written input in different language contexts.

Method: Participants with varying degrees of L2 exposure at school will complete the same Old/New recall task across four conditions: single-language L1, single-language L2, inter-sentential mixing, and intra-sentential mixing. Measures of accurate recall (through d' scores) and processing fluency (through response times) will be taken into account for further analysis.

Results: We hypothesize that participants with lower L2 exposure will demonstrate a mixingcost (for both intra- and inter-sentential mixing) in accurate recall compared to their L1, whereas students with higher L2 exposure may show no such effect. Additionally, we still expect an accuracy cost in the L2 condition compared to the L1 for both groups. This aligns with prior findings in auditory recall tasks (Antón et al., 2016), which provided spoken input instead of written input in the present study. All data will have been collected and analyzed by the time of the conference.

Conclusions This study will provide new insights into the effects of language-mixing on recall through reading. By bridging the research fields of bilingualism and education, we aim to contribute to understanding how language-mixing strategies can enhance or hinder learning outcomes in (multilingual) educational contexts.

 ${\bf Keywords:} \ {\rm Language, mixing, mixing \ costs, written \ recall, language \ control, \ comprehension}$

Narrative context and Pragmatic marker use in older adults with Mild Cognitive Impairment

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Purpose: This study investigates the impact of autobiographical narrative context (past vs. present) on pragmatic marker (PM) use, both verbal (VPMs) and non-verbal (NPMs), in five elderly individuals with Mild Cognitive Impairment (MCI) (Duboisdindien & Bolly, 2025). It explores whether context influences PM deployment and underlying cognitive mechanisms.

Method: Discourse from the VIntAGE corpus was analysed, focusing on VPMs and NPMs across past- and present-oriented autobiographical tasks. PM functions were categorised following Bolly and Crible's taxonomy (2014), including interactive, structuring, expressive, and ideational functions. Analyses included unimodal (VPMs or NPMs) and multimodal co-occurrence patterns, supported by correspondence and multiple-factor analyses.

Results: VPMs linked to planning dominated present contexts, while agreement and textual maintenance functions prevailed in past contexts. Adaptive NPMs were most frequent, with higher representation in present narratives. Multimodal analysis showed synchronisation between VPM and NPM functions across contexts, despite individual and task-related variability. Statistical tests indicated a strong association between PM types and contexts ($p < 10^{-16}$), but overall functional profiles remained stable.

Conclusions: Contextual variations in PM use among individuals with MCI were observed, yet core functional patterns were not substantially altered. Findings support personalised approaches in evaluating pragmatic competence in cognitive decline.

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Keywords: Autobiographical discourse, Mild Cognitive Impairment, Multimodal communication, Gestures, Pragmatics

How do L2 listeners perceive vowel variation in familiar and unfamiliar regional accents of English?

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Purpose: Listening in a second language (L2) is generally more challenging than in a first language (L1), even for proficient L2 learners. These challenges often increase when speakers have an unfamiliar regional accent. In this study, we investigate to what extent vowel variation in regional English accents (General British, Northern British and Australian English) affects speech perception for Dutch-speaking learners of English in Flanders.

Method: Traditionally, studies have relied on the perceptual similarity of L1 and L2 sounds to identify 'difficult' non-native vowel contrasts (e.g., $/\alpha/-/\epsilon/$ for Belgian-Dutch listeners). Our approach, by contrast, is more comprehensive, as it compares the acoustic properties of all Dutch and English vowels to predict which vowels in each regional accent may be challenging for Belgian-Dutch listeners (cf. *L2 Linguistic Perception model* (1)). This innovative method results in more accurate predictions (2). To make these predictions, we use formant and duration values for Belgian-Dutch and English vowels as input for our statistical model (*linear discriminant analysis*). The model's output will show which regionally-coloured vowels are expected to be difficult for Dutch-speaking listeners.

Results and Conclusions: We are currently building the statistical model. Based on its output, we will set up a vowel identification task with 40 English-speaking and 40 Dutch-speaking listeners, who will be asked to identify the English vowels they hear. The results of this study will allow us to empirically validate if the predicted vowels are indeed difficult for these listeners. Additionally, they will shed light on how flexibly L2 listeners can adapt to unfamiliar regional accents.

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Keywords: speech perception, regional accents, vowel variation, L2 listening, English

On the impact of syntactic and semantic information when processing words in sentences

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We report the results of two experiments that used the Rapid Parallel Visual Presentation (RPVP) procedure to evaluate the contributions of syntactic and semantic information when identifying words within a sentence context. Participants were presented with five-word sequences that could either be grammatically correct (e.g., "the cat ate fresh food") or an ungrammatical re-ordering of the same words (e.g., "ate cat food the fresh"). Word sequences were displayed for 200 milliseconds, after which participants were asked to classify a word at a post-cued location – either position 2, 3, or 4, in the 5-word sequence. In Experiment 1, the classification was based on a syntactic category (is this word a noun or an adjective?). In Experiment 2 the classification was based on retrieval of the object associated with the word (is the object referred to by this word bigger or smaller than 1 meter?). Analyses tested for effects of grammaticality on word classification accuracy (i.e., a sentence superiority effect - SSE) per target word position in both experiments. For syntactic classifications (Experiment 1), the SSE was significant at all positions. On the other hand, for semantic classifications the SSE was only significant at position 4. We conclude that in the RPVP paradigm readers use both syntactic and semantic information to rapidly build a primitive sentence structure, but with semantic constraints having a later influence. This structure then helps them to associate more detailed syntactic and semantic information to word identities at specific locations within the sentence.

Keywords: Sentence superiority, Rapid Parallel Visual Presentation, Syntax, Semantics

Poster session 2

Ungrammatical Priming and its Influence on Production and Acceptability in Monolingual Children and Adults

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There is limited understanding of how priming of anomalous (ungrammatical) structures affects language production (i.e., reproducing previously encountered syntactic structures, Bock, 1986) and their acceptability. This gap is particularly pronounced in children with respect to language acquisition and processing. Notably, research showed adaptation to anomalous structures in adults through increased exposure (Ivanova, 2012), though not for all anomalies (Snyder, 2000), highlighting the need to identify which structures and levels of ungrammaticality trigger priming and adaptation.

Our study investigates how exposure to ungrammatical dative structures affects production and grammaticality judgments (GJ) in monolingual English-speaking children (6–8 years) and adults. Building on extensive priming research of double object (DO) vs. preposition object (PO) constructions, we focus on shifted PO structures (e.g., "Dora is sending **to Boots** the dog"), found in corpora (Hawkins, 1994) and by chance in a priming study (Pickering et al., 2002). Preliminary pilot GJ results indicate that shifted POs are rated as moderately acceptable (children: 3.55/5, adults: 3.31/5), making them viable candidates for priming. In a video description task, participants complete a pre-test (neutral intransitive primes, e.g., "Dora is dancing"), a priming session (shifted POs) followed by a post-test (same as the pre-test) but target descriptions are always ditransitive. Additionally, a GJ task is implemented before and after the priming experiment.

In contrast to the pre-test, we expect shifted PO production during the priming block followed by decreased production during the post-test block along with higher GJ ratings, particularly in children, who are more susceptible to structural adaptation (Chang et al., 2002; 2006). These findings will enhance our understanding of how ungrammatical structures impact language processing and adaptation, with implications for theories of syntactic priming and language change. Data collection is ongoing, and results will be ready by the conference.

Keywords: language development, structural priming, adaptation

Model of the perception-action coupling and automation of developmental dyslexia (DD)

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Our experimental results show the correction of oculomotor (saccade size), cognitive (lexical access) and automatic reading processes (high-frequency word frequency effect) in DD, which supports previous work on the effect of proprioceptive intervention in DD (Quercia et al., 2007, 2011; Vieira et al., 2009). Our results support a causal link between proprioceptive dysfunction and DD. Proprioception is an interoceptive sense involved in the perception of the Perception-Action coupling and automation processes. They lead us to propose a model of DD.

The neurophysiology of Perception-Action coupling comprises five stages: 1) Multisensory integration, which depends on stress, attention and action; 2) Anticipation of action on the basis of integrated data and memorised internal models, which enables action to be predicted; 3) Decision and execution of action, with motor commands being sent to effectors and copies of efferences being sent to the cerebellum; 4) Detection and correction of errors by comparison between the predicted movement and the movement performed (working memory and double-tasking); 5) Adaptation or creation of internal models and their long-term storage (implicit memory) during REM sleep.

These stages appear to be impaired in DD with the presence of deficits in multisensory perceptual integration (Quercia, 2020), proprioceptive integration (Laprevotte et al., 2021), spatial integration (Quercia et al., 2015) and motor control, with the presence of motor prediction deficits (van de Walle et al, 2021), with attentional deficits, dual-task deficits (balance/reading) of the working memory (Vieira et al., 2009), and with REM sleep disorders due to the presence of micro-awakenings (Guilleminault et al., 1998) involving the stages of the Perception-Action pair. This model integrates the various sensory-motor theories and the observation of a defective flow of auditory and visual percepts necessary for phonological awareness (Boets et al. 2013). This DD model focuses on perception and automation mechanisms.

Keywords: Modeling, Dyslexi, Perception, action, Automatisation, Phonological awareness, Dysproprioception

Cross-Linguistic Influence and Degrees of Grammaticality: Priming Null and Overt Subject Pronouns in Bilingual Children

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Divergent language acquisition in bilingual children has been explained in terms of cross-linguistic influences, whereby the presence of a structure in only one language may lead to its overproduction/overacceptance in the other, even if ungrammatical. Structural priming has been proposed as a mechanism underlying cross-linguistic influence (Serratrice, 2022), as it occurs both within and across languages, leading to the production of dispreferred/ungrammatical structures in bilingual children (Hervé et al. 2016; Hsin et al., 2013). However, it remains unclear whether structures with different degrees of grammaticality (e.g., inappropriate vs. ungrammatical) are equally primed.

To address this, we will conduct two within-language (Italian-to-Italian, German-to-German) priming experiments with German-Italian school-age bilingual children. The study focuses on the production of null and overt subject pronouns (OSP). German, a non-null subject language, does not allow null subjects but only OSPs, whereas Italian permits both but restricts OSPs to pragmatically constrained contexts.

The study aims to investigate whether null and/or overt subject pronouns can be primed and whether the degree of grammaticality of a structure (inappropriate (1) vs. ungrammatical (2)) affects the likelihood and magnitude of priming. This study will provide insights into the underlying mechanisms of priming and cross-linguistic influence.

(1) ?Marco festeggia il suo compleanno e poi lui spegne le candeline.

(2) *Marco feiert seinen Geburtstag und dann pustet \emptyset die Kerzen aus.

"Marco celebrates his birthday and then he blows out the candles."

Hervé, C., Serratrice, L., & Corley, M. (2016). Dislocations in French-English bilingual children: An elicitation study. Bilingualism, 19(5), 987–1000.

Hsin, L. Legendre, G., & Omaki, A. (2013). Priming Cross-linguistic interference in Spanish-English bilingual children. BUCLD 37 Proceedings. Somerville, MA: Cascadilla Press.

Serratrice, L. (2022). What can syntactic priming tell us about crosslinguistic influence? In K. Messenger (Ed.), Syntactic Priming in Language Acquisition: Representations, mechanisms and applications, 129-156. John Benjamins.

Keywords: structural priming, crosslinguistic influence, bilingual children, null and overt subject pronouns

Out of sight, out of mind: Investigating the role of salience in second language acquisition

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Purpose: Salience-the extent to which a feature stands out from its environment-has been posited as an important cognitive factor in second language acquisition (SLA). Goldschneider and DeKeyser's (2001) meta-analysis found key properties to explain morpheme acquisition order in second language (L2) English, which they theorized might all comprise different manifestations of linguistic salience, suggesting its important role in SLA. However, supporting empirical research remains scarce, particularly looking at theorized salient properties individually.

Methods: We conducted three experiments wherein participants read stories in an Englishbased semiartificial language as an implicit learning task. Included were two target morphemes, "-o" and "-ulp," manipulated differently in each experiment to compare properties believed to impact an L2 form's salience: length, boundedness, and contextual redundancy. Eye tracking measured attention to target forms as well as implicit learning thereof (via a grammaticality sensitivity index; Godfroid, 2016). We hypothesized that high-salient forms would yield greater attention and facilitate acquisition relative to low-salient forms.

Results: Experiment 1 (length only) found significantly more attention to the high- (longer) than low-salient (shorter) form, but no evidence of implicit learning of either, possibly due to low overall salience of both forms (both bound, redundant). Experiments 2 and 3 (bound-edness/redundancy and length) preliminary results again show greater attention to the high-(unbound, non-redundant, and/or longer) than low-salient (bound, redundant, and/or shorter) form, which is compounded in forms with multiple high-salient properties (e.g., unbound and longer).

Conclusions: Final results of the later experiments, including implicit learning patterns, are expected by March 2025.

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Godfroid , A. (2016). The effects of implicit instruction on implicit and explicit knowledge development. Studies in Second Language Acquisition, 38, 177–215.

Goldschneider, J, & DeKeyser, R. (2001). Explaining the "natural order of L2 morpheme acquisition" in English: A meta-analysis of multiple determinants. Language Learning, 51(1), 1–50.

Keywords: salience, second language acquisition, attention, awareness, eye tracking

Examining Language Control in Bilingual Speakers with Primary Progressive Aphasia (PPA)

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Primary Progressive Aphasia (PPA) is a neurodegenerative condition marked by early speech and language decline. PPA is associated with deficits in lexical retrieval and phonological processing which are key elements in bilingual language processing. Furthermore, PPA patients exhibit impairment of executive functions, including shifting, inhibition, and updating of working memory. Given the discussion on whether these executive control functions have an overlap with language control, which is a cognitive process activated in the bilingual mind to prevent cross-language interference and ensure the selection of the target language, our aim with this study is to investigate the impact of PPA on language control mechanisms.

This study involves bilingual Dutch-English speakers who have been diagnosed with PPA. The paradigm of the blocked language order effect is utilised to investigate proactive language control. This effect entails worse performance in language A when preceded by a language B block compared to performance in language A when preceded by a language A block. The procedure comprises one training block and three single language experimental blocks, in which participants perform a picture naming task in an L1-L2-L1 sequence while their accuracy and reaction times (RTs) are recorded. A control group of neurologically healthy bilinguals is used for comparative analysis.

We hypothesize that individuals with PPA will have an overall slower response to the stimuli and reduced accuracy compared to the control group. We also expect a smaller size blocked language order effect in the PPA group compared to the control, since their language control capabilities are likely to be compromised.

Insights from this study will enhance our understanding of bilingual language processing and the relationship between language control and executive control, especially in PPA. It can also inform the development of targeted clinical assessments and interventions.

Keywords: Language Control, Primary Progressive Aphasia, Bilingualism, Blocked Language Order Effect

Is "bissie" smaller than "hombure"? Computational perspective and human intuition on size sound symbolism of pseudowords

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Sound symbolism is the phenomenon where certain letters/phonemes are associated with specific physical features. One of the most studied dimensions is "size sound symbolism", where speech sounds evoke perceptions of largeness or smallness. Even pseudowords (non-lexical strings) can be assigned to semantic categories based on their surface features. This study analyses human judgement data from Westbury and colleagues (2018) who tested the semantic category membership of 8000 pseudowords. Beyond phonological properties, pseudoword meaning can be determined by summing the semantic vectors of their (sub)lexical units – an approach implemented in the fastText model (Bojanowski et al., 2017).

Using two fastText models, we derived semantic representations for each pseudoword and computed their semantic similarity to words denoting smallness and largeness. This allowed us to identify pseudowords with the highest probability of belonging to these categories. From Westbury's dataset, 115 pseudowords were categorized as small and 84 as large by participants. We examined their orthographic similarity to the "best" large/small pseudowords identified by Westbury's phonological and two fastText models.

Results showed that human judged, "small-sounding" pseudowords share orthographical features with "small" pseudowords highlighted by models which consider either phonological (Westbury et al., 2018) or distributional semantics properties (fastText). Findings are more ambiguous for "large-sounding" pseudowords.

These exploratory results suggest that there is a degree of overlap between human intuition about size sound symbolism of pseudowords, on one hand, and phonological and distributional semantic features, on the other. These findings have yet to be confirmed with behavioural evidence.

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Keywords: pseudowords, size sound symbolism, semantic representations

Time-course of semantic priming effects

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Purpose: The time-course of semantic priming effects has been studied using divergent point analysis (DPA) methods, but these have been criticized for lacking construct validity and having poor statistical properties. An alternative approach is the piece-wise additive mixed model (PAMM), a type of survival analysis that allows for non-linear interactions with time. PAMMs offer the advantage of tracking how effects emerge and change over time. This study examines when semantic priming effects emerge and whether their shape changes over time while control-ling for lexical and sublexical factors.

Method: Lexical decision task data from the Semantic Priming Project (Hutchison et al., 2013) were analyzed using PAMMs. Variables such as word length, semantic neighborhood density, frequency, orthographic neighborhood density, mean bigram frequency, lexicality (word or nonword) and stimulus-onset-asynchrony (SoA, 200ms or 1200ms) were controlled for in the analysis.

Results: In the 200ms SoA condition the semantic priming effects were linear until approximately 650ms after which the effect weakened. High prime-target similarity was associated with faster response times, while lower similarity led to slower responses. In the 1200ms SoA condition this effect was stronger but occurred during a shorter time window. In the nonword conditions the same shape of the effect was observed, but it occurred later and was less strong.

Conclusion: Semantic priming effects are linear and the duration for which the effect remains significant is influenced by the SoA. For nonwords the direction of the effect is switched and is less strong.

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Keywords: Semantic priming, Time, course, lexical decision task, survival analysis
The role of attentional resources on errors and disfluency in speech production

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The present ongoing experiment aims to test two accounts of disfluency and their opposing predictions regarding the influence of attentional resources on speech production. The covert repair hypothesis (CRH) considers disfluencies as repairs of speech errors. The CRH is nested in the perceptual loop theory of monitoring, which assumes that monitoring requires attention. Therefore, attrition of attentional resources would lead to fewer disfluencies. In contrast, the EXPLAN model emphasizes the (mis)timing of planning and execution. Specifically, disfluency arises when execution of one segment has finished before the plan for the next segment is finalized. By executing existing plans (leading to repetitions or filled pauses) speakers buy time for planning to catch up. Therefore, slow planning, fast execution or both would contribute to disfluency. We will compare connected-speech samples by speakers in divided and undivided attention conditions of the network task. CRH predicts more unrepaired errors and less disfluency under divided attention, whereas EXPLAN predicts more disfluency (assuming planning suffers more than execution). We use a novel dual task that relies solely on tactile perception in order to reduce stimulus modality interference (no auditory or visual input), and to prevent the dual task from consuming resources related to overt production (the task is passive not active). We will test for effects of divided attention on speech rate, monitoring accuracy, and fluency. First, we will examine whether and how speakers adjust their speech rate over time as cognitive demand increases. Second, we will test whether the ability to detect and repair speech errors declines when attentional resources are taxed. Third, we will test whether fluency is affected by a decrease in attentional resources. Summarizing, with this novel approach we will investigate how disfluency and speech errors behave in relation to each other and across different contexts of attentional resources and planning time.

Keywords: Disfluency, attention, monitoring

Comparative study of the skills of French-speaking children with Developmental Language Disorder (DLD) in kindergarten in fields recognized as predictors of reading and spelling

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The aim of this study was to examine early predictors of reading and spelling skills in kindergarten children with and without DLD. DLD is an oral language disorder with significant functional impact on social interactions and/or schooling that cannot be explained by another biomedical condition or a lack of language exposure (Bishop et al., 2017). It affects about 7% of children aged 4-5 years with 48%-87% developing written language difficulties (Cleaton & Kirby, 2018). Investigation of early predictors of written language skills in children with and without DLD identified in the general population is essential for early identification of those at risk for written language disorders. Participants are 335 French-speaking children with and without DLD from the PRESAD cohort(1). Standardized and experimental tasks assessed oral language, syllable reading and spelling, as well as main predictors of reading and spelling acquisition, i.e., letter knowledge, phonological awareness and rapid automatized naming. We hypothesise that children with DLD will perform significantly worse on these tasks than those without DLD. However, given the variability of DLD profiles, we also expect that some children with DLD may not show difficulties in syllable reading and spelling. Results will be discussed in relation to current scientific literature.

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(1) Predictors of REading and Spelling Acquisition and Disorders in children with or without developmental language disorder (ANR-23-CE28-0007)

Keywords: DLD, predictors, spelling, reading

What and how do we learn about morphemes through reading experience?

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Purpose: Most words in English and other languages are built by combining smaller units of meaning called morphemes (e.g., $teach + -er \rightarrow teacher$). Understanding how a language's morphology works is vital to access the meanings of known words and compute the meanings of unfamiliar words (e.g., tweeter). In English-speaking countries, explicit morphological instruction is limited, so children must learn the meanings of different morphemes through reading.

Method: To understand what and how children might learn about morphology through print, we quantified the morphological information available in 1,200 books popular with British children and young people. We then formulated hypotheses on how morpheme learning might occur, and tested these hypotheses using the morpheme interference paradigm with 120 adults.

Results: We found that affix knowledge depends on the number of distinct stems with which affixes combine and how easily affixes are detected in complex words. We demonstrate that words requiring specialised etymological knowledge for segmentation do not contribute to affix learning, and affix-like patterns that arise in non-meaningful contexts (e.g., *-er* in *corner*) actively harm learning.

Conclusions: Our research illustrates how analysis of the linguistic environment can help us make sense of individuals' linguistic knowledge and develop ecologically valid theories of learning.

Keywords: Morphology, Morpheme learning

Examining the diagnostic value of semantic and lexical parameters in spoken word production in neurological pathologies

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Semantic and lexical parameters such as semantic neighbourhood density, number of features, feature distinctiveness and frequency strongly influence word production (see e.g. (1)). They also appear to impact word production in neurologically caused word-finding disorders differently depending on the underlying pathology (e.g. (4)). This project aims to use a large set of semantic and lexical parameters for diagnostic purposes in neurologically caused word-finding disorders in German.

In advance, we collected German semantic norm data for 216 concrete nouns from different semantic categories based on the methodology of English reference studies ((2), (3)). In the present study, participants of all age groups (n = 217) named coloured pictures corresponding to these nouns in a picture naming task. Using mixed effect models, we analyse how semantic and lexical parameters influence the response time and correctness in healthy controls and how the impact is influenced by age.

At the conference, preliminary results will be presented as well as potential perspectives of using semantic and lexical parameters for a more precise diagnosis of word-finding disorders in aging and neurologic pathologies.

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Keywords: spoken word production, picture naming, semantic and lexical parameters, age, dementia, aphasia

Exploring Spontaneous Speech Synchrony and Auditory Statistical Learning: The Role of Speech Rate Preferences

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Purpose: Spontaneous speech synchronization (SSS) refers to the tendency of individuals to unconsciously align their syllable production with an external rhythmic signal. Previous research (Assaneo et al., 2019) showed that high synchronizers, who are highly compelled to align their concurrent syllable production with the perceived rate, exhibit better word-segmentation abilities in an auditory statistical-learning (ASL) task. This result shows the importance of speech-motor synchronization to early aspects of language learning. The current study explores whether the relationship between SSS and ASL is a stable individual trait, independent of preferences for speech rate.

Method: So far, 120 of the planned 200 Dutch-speaking participants completed an SSS and ASL task. ASL is measured via a reliable four-alternative forced-choice recognition task that contrasts target words with group, position, and control foils. In both tasks, participants are exposed to Dutch syllables at a rate of 4.5 syllable/s. Additionally, individuals' preferred speech rate is measured through auditory rate-preference and speech-production tasks (Lubinus et al., 2023).

Results: A positive correlation between SSS and ASL performance is expected, with high synchronizers showing better word-learning outcomes. A curvilinear regression analysis will be conducted to examine speech-rate preferences on the phase locking values for synchrony. Better synchronization is expected to be associated with a preference for 4.5 syllables/s.

Conclusions: This study will give more insight into the interaction between auditory-motor synchrony and language learning by replicating it in a different language population –Dutchand accounting for individuals' preferred speech rate.

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Keywords: auditory motor synchrony, spontaneous speech synchronization, auditory statistical learning, individual preferences

Exploring systematic spatial association effects arising from language experience: a mouse-tracking experiment

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Purpose: Recent evidence suggests that language can encode spatial knowledge that is primarily attributed to sensorimotor experience (Louwerse, 2008; Rinaldi & Marelli, 2020). The question remains whether language – a non-spatial learning environment – can encode spatial information that is behaviorally relevant. This study examines whether words that are not typically associated with space but are implicitly linked to vertical spatial locations in natural language influence attentional and motor biases in a mouse–tracking paradigm.

Method: The stimuli were nouns that were not typically associated with a particular spatial location and were uniformly distributed based on their linguistic index. The linguistic index (LI) measured a word's association with vertical space by calculating the difference in its similarity to 'up' and 'down' according to a computational model purely trained on textual data. We conducted an experiment in which participants categorized each word as abstract or concrete by dragging it with the mouse to either a lower or upper target area on the screen.

Results: Results showed an interaction between the linguistic index and movement direction: the more strongly a word is, in language usage, associated with 'up', the slower the reaction time in moving downward X2(1) = 4.03, $p = 0.045^*$

Conclusions: The results suggest that language alone can shape spatial knowledge, indicating that linguistic exposure-without direct sensorimotor experience-can influence how we process and respond to spatial information. This challenges strong embodiment theories and highlights the need to consider language as a key factor in shaping spatial cognition and motor behavior.

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Keywords: spatial cognition, mental representations, distributional semantics

Interplay between reading and spelling learning : a longitudinal study from the final year of kindergarten to first grade.

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Purpose: Reading and spelling acquisition is often considered as two sides of a coin (Ehri, 2000). Most studies have focused on describing the predictors of one without simultaneously examining the other. The few studies that have investigated both domains indicate that they are closely related, yet they rely on partly different skills. However, to our knowledge, no study has examined this question in French. It is particularly relevant when learning to read and to spell this orthography, given the asymmetry between grapheme-phoneme correspondences (Ziegler and al., 1996). To better understand the interplay between reading and spelling acquisition at the early stages of learning, we examined (1) the extent to which reading performance can be explained by spelling and vice versa and (2) the contribution of phonological awareness, RAN and letter knowledge to both domains.

Method: The participants are 341 children from the PRESAD* cohort, enrolled in the final year of kindergarten and then in first grade. In kindergarten, reading and spelling were assessed using simple syllable decoding and spelling and phonological awareness, RAN and letter knowledge with standardized and experimental tasks. In first grade, we assessed word, non-word and text reading and word and non-word spelling.

Results: The latest participants are currently being tested. The results will be analyzed in March and interpreted in light of Kim's (2020) Interactive Dynamic Literacy Model.

*Predictors of REading and Spelling Acquisition and Disorders in children with or without developmental language disorder (ANR-23-CE28-0007)

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Keywords: reading, spelling, learning, interplay, written language predictors

Word recognition across the lifespan: Ratings and lexical decision data for 9,707 Czech words

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Purpose: Large psycholinguistic databases are essential for understanding word recognition and exploring how variables, such as age-of-acquisition (AoA), imageability, or valence, may have a role in lexical processing (1,2). However, there are still issues with the availability of large datasets in different languages and from diverse populations. In this paper, we present two new datasets that aim to contribute to the diversity of psycholinguistics, with: (1) Psycholinguistic norms for Czech words and (2) lexical decision (LD) data from Czech speakers across different age groups.

Method: Native Czech speakers (N=2,357, M =22.8, SD =5.6) rated 9,707 words for concreteness (1=abstract-5=concrete), imageability (1=low-7=high), AoA (in years), and valence (1=negative-7=positive). LD data are being collected across an age span of 18-90 y/o (N=3,024, M =34.4, SD =17.3), with completion expected this March.

Analysis: Concreteness (M=3.5, SD=0.9) and imageability (M=5.4, SD=1.1) were bimodally distributed, while AoA (M=8.0, SD=3.0) and valence (M=4.1, SD=0.9) were normally distributed. The strongest correlations were between concreteness and imageability (r=.77), imageability and AoA (r=-.40), and AoA and valence (r=-.22). Once LD data collection is complete, response times will be analyzed using linear mixed-effects models, incorporating word ratings and participant age as predictors, to assess how different age groups may vary in the lexical processing.

Conclusions: This study will provide insight into age effects in word processing and contribute to clarifying the role of various factors in lexical recognition.

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Keywords: word processing, lexical norms, lexical decison task, Czech

Detrimental impact of multimodal training on letter-sound association learning

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Purpose: Multimodal trainings are typically considered more efficient than methods that rely on information from one modality(1). We tested this assumption by comparing three methods that recruited an increasing number of training modalities in a context of spoken syllable-pseudoletter association learning.

Method: 58 participants learned three sets of syllable-pseudoletter associations through three methods: *Audio-Visual* (participants were exposed to syllable-pseudoletter associations while no action was required), *Audio-Visual-Writing* (participants were also required to write down the pseudoletter after being exposed to each association), *Audio-Visual-Writing-Pronouncing* (participants were required to write down the pseudoletter and repeat the syllable after being exposed to each association). Learning performance was assessed immediately after learning and 24 hours later, using a low-level visual task (Is the same pseudoletter presented twice?) and three task that relied on the knowledge of syllable-pseudoletter associations (A-V matching, reading, and writing task)

Results: No impact of training method in the low-level visual task. The performances in the tasks that relied on the knowledge of syllable-pseudoletter associations gradually decreased as the number of training modalities increased. Interestingly, this pattern was restricted to Day 1. There was a trend that adding more training modalities might help the cognitive system to consolidate new information, especially in difficult processing contexts.

Conclusions: In contrast to the literature, we reported a detrimental effect of multimodal training on audio-visual association learning. This could be due to high memory and attentional loads required by this training(2), especially when different input modalities were introduced in a short delay. This suggests that the benefits of multimodal learning are not clear-cut and its applications should be conducted with caution.

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Keywords: reading acquisition, associative learning, multimodality, multimodal training

Orthographic support for word learning in noise

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Purpose: Oral vocabulary learning typically occurs amongst background noise, which may hamper word learning. Evidence suggests that orthography promotes word learning (Ricketts et al., 2009). It is hypothesized that orthography could mitigate the impact of noise by reducing cognitive load and providing scaffolding for phonology (Salins et al., 2021). Therefore, this study will examine the orthographic facilitation of word learning in noise.

Methods: Participants comprised 125 native English speakers aged 19-35 years. They were taught 16 novel words online, in three training blocks, each including a repetition and picture naming task. Orthography was manipulated within items and between participants (present vs. absent) and noise was manipulated within participants and between items (quiet vs. noise). Learning was assessed in training using picture naming, and after training using picture naming and spelling tasks.

Results: During training, there was a significant main effect of orthography, with the largest effects in blocks 2 and 3. No effect of noise was observed in the training blocks. On the picture naming posttest, there was a significant main effect of orthography and a significant interaction between orthography and noise condition with greater orthographic facilitation observed for words learned in noise. There was a significant main effect of orthography on the spelling posttest. No other effects were significant.

Conclusions: Orthography is beneficial for word learning in noise for phonological learning, but this is not seen in orthographic or semantic learning.

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Keywords: word learning, background noise, orthography, orthographic facilitation

Do bilinguals exit or exit out? Evidence on double-framing in French

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Purpose: Following Talmy's typology(2), languages are classified as verb-framed (Path in the main verb, e.g., Romance) or satellite-framed (Path in a satellite, e.g., Germanic). However, bilingual settings can blur these distinctions. This work examines the role of bilingual language contact in shaping double-framing, a relatively understudied phenomenon where Path appears in both the verb and the satellite (e.g., *exit out*). Double-framing has been attested in contact situations both historically and today(1,3). Hence, adopting a historical-psycholinguistic approach allows us to test whether bilingual contact promotes the emergence and acceptability of double-framing over time.

Study-1 / Method-Results: We conducted a wide-ranging study comparing continental Old French and Anglo-French (contact variety spoken in England) which involved re-tokenizing and lemmatizing the 6-million-word Anglo-Norman Hub corpus. While double-framing was allowed in all varieties of Old French, we show for the first time that Anglo-French shows a stronger preference for the satellite-framed pattern (neutral verb and particle, e.g., *go out*).

Study-2 / Method-Results: Subsequently, we conducted an acceptability judgment study in French to test whether French-English bilinguals in high-contact environments (Canada) accept Old-French-style double-framing (*sortir hors 'exit out') more than speakers in lowercontact environments (France). Participants also evaluated marginally grammatical pseudodouble-framing (?sortir dehors 'exit out(side)'), satellite-framed (?aller dehors 'go out(side)'), and grammatical verb-framed constructions (sortir 'exit'). We predicted greater acceptance of double-framing and satellite-framed constructions in Canadian speakers due to language contact, while verb-framed constructions would remain broadly accepted. Preliminary results show no overall differences between groups, but higher individual contact with English in Canada tends to increase acceptance of Old-French-style double-framing.

Conclusion: Our studies shed light on how bilingualism and contact potentially drive language change, and to what extent grammatical constraints are reshaped in bilinguals.

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Keywords: bilingualism, language contact, double, framing, historical, psycholinguistic approach

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