

# PiF 2023

# Psycholinguistics in Flanders

Henri Dunantlaan 2, Ghent

29<sup>th</sup> – 31<sup>st</sup> May 2023



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# Programme

\*All talks are in room Leszaal 1.2; coffee & poster sessions & lunch are in Bibliotheek 1

Monday, 29 <sup>th</sup> May 2023	
14.00	<b>Conference opening</b>
14.10	<b>Satellite symposium in honour of Dominiek Sandra</b> <ol style="list-style-type: none"> <li>1. <b>Lisan Broekhuis, University of Antwerp</b> - Exploring the limits of language non-selectivity: How do multilinguals process non-native cognates and interlingual homographs in sentences?</li> <li>2. <b>Sarah Bernolet, University of Antwerp</b> - Dutch proficiency courses as a window on native language processing</li> <li>3. <b>Astrid Geudens, Thomas More University of Applied Sciences</b> - Reading instruction in primary education: what does really work?</li> <li>4. <b>Emmanuel Keuleers, Tilburg University</b> - Why transactions matter in thinking about the language environment</li> </ol>
15.50	<b>Coffee &amp; Poster session 1 (P1.1 – P1.17)</b>
17.00	<b>Keynote 1: Prof. Steven Frisson, University of Birmingham</b> Title: You've already seen it: Parafoveal pre-processing in reading
18.00	<b>Closing the day + optional social event</b>

Tuesday, 30 <sup>th</sup> May 2023	
9.30	<b>Talk session 1: Language comprehension</b> <ol style="list-style-type: none"> <li>1. <b>Anna Petukhova, Radboud University</b> - The Role of Individual Differences in the Ability of Generalizing Compositional Meaning</li> <li>2. <b>Laura Raveling, Humboldt University Berlin</b> - Predicting Compound Words for Imaginary Objects</li> <li>3. <b>Jessica Nieder, Heinrich-Heine-Universität Düsseldorf</b> - A discriminative model of subliminal priming in Maltese auditory word comprehension</li> <li>4. <b>Phaedra Royle, Université de Montréal</b> - ERP data in support of French gender agreement maturation from pre-schoolers to adults</li> <li>5. <b>Álvaro Cortés Rodríguez, University of Tübingen</b> - Undoing gender in a gender-marking language: Gender-inclusive forms in plural role nouns in German</li> </ol>
10.50	<b>Coffee break</b>
11.20	<b>Talk session 2: Language production</b> <ol style="list-style-type: none"> <li>1. <b>Anna Marklová, Humboldt University Berlin</b> - Expression and perception of endpoints during language acquisition: Three studies on Czech</li> <li>2. <b>Catherine T. Pham, The Pennsylvania State University</b> - Language Production in Constrained Interaction: Examining Speaker Modifications Beyond Acoustic Phonetics</li> </ol>

	<p>3. <b>Ruth Corps, Max Planck Institute for Psycholinguistics</b> - Repetition leads to long-term suppression of the word frequency effect</p> <p>4. <b>Sam Boeve, Ghent University</b> - Auditory Statistical Learning and the Role of the Articulatory Motor System</p> <p>5. <b>Yvonne Portele, Goethe University Frankfurt</b> - Choosing referential expressions: The role of animacy and discourse salience</p>
12.40	<b>Lunch</b>
13.50	<p><b>Talk session 3: Reading &amp; Tools</b></p> <p>1. <b>Matthieu Bignon, University of Lille</b> - Visual-Verbal PAL: a Cross-Sectional Study to Investigate the Role of its Subcomponents in Sublexical and Lexical Reading Skills in French</p> <p>2. <b>Mariia Baltais, Ghent University</b> - Does syntactic productivity affect reading? An eye-tracking study on Spanish</p> <p>3. <b>Georgia Knell, Vrije Universiteit Brussel</b> – Out of sight, out of mind: investigating the role of salience in the initial processing of morphology in SLA</p> <p>4. <b>Julia Edeleva, Friedrich Schiller University Jena</b> - Letter Recognition Strategies of Emergent Adult L2 Readers: The Role of L2 Knowledge and Cross-Linguistic Transfer</p> <p>5. <b>Mikuláš Preininger, Charles University</b> - SocioLex: Normative data set of 2,700 Czech words rated along nine dimensions</p> <p>6. <b>Dörte de Kok, University of Groningen</b> - Discuit – a tool for dividing items into equal sets</p>
15.20	<b>Coffee &amp; Poster session 2 (P2.1 – P2.16)</b>
16.30	<p><b>Talk session 4: Language context and prediction</b></p> <p>1. <b>Marco Ciapparelli, University of Milano-Bicocca</b> - Modeling compound word relational interpretations with contextualized word embeddings</p> <p>2. <b>Miriam Brockmeyer, Ludwig-Maximilians-Universität München</b> - Effects of predictability and plausibility on context updating</p> <p>3. <b>Solveig Castelli, University of Groningen</b> - The effect of log forward transitional probability on verb production</p> <p>4. <b>Ksenia Nowak &amp; Nadezhda Kushina, University of Kaiserslautern</b> - Effective speech rate on global and local prediction</p> <p>5. <b>Dato Abashidze, The Leibniz-Centre General Linguistics</b> - Using of morphological cues on predictive language processing: A visualworld eyetracking experiment</p> <p>6. <b>Emma Wing, University of Connecticut</b> - “She filled the cookie jar”: A partially filled cookie jar is constitutive of the corresponding event representation</p>
18.00	<b>Closing the day</b>
19.30	<b>Conference dinner</b>
<b>Wednesday, 31<sup>st</sup> May 2023</b>	
9.30	<p><b>Talk session 5: Multilingualism</b></p> <p>1. <b>Guadalupe A. Mendoza, University of California, Irvine</b> - Sustainability: A New Approach to Understanding Bilingual Speech Planning</p>

	<p>2. <b>Rianne van Lieburg, University of Antwerp</b> - The development of L2 syntactic representations in production and comprehension</p> <p>3. <b>Amélie Menut, University of Lille</b> - Suffixes common to French and English can both help and hinder learning of English words in late bilinguals.</p> <p>4. <b>María Sánchez, Vrije Universiteit Brussel</b> - When bilinguals switch without a cue: voluntary language switching in a sentence context</p> <p>5. <b>Eva Puimège, KU Leuven</b> - The effects of typographic enhancement and attention on the development of explicit and implicit L2 collocation knowledge</p> <p>6. <b>Nicholas Sulier, University of California, Irvine</b> - How Language Experience Impacts Cognitive and Psychological Factors for Heritage Speakers and Language Learners</p>
11.00	<b>Coffee break</b>
11.30	<p><b>Talk session 6: Clinical psycholinguistics</b></p> <p>1. <b>Chloé Parmentier, Université catholique de Louvain</b> - Language proficiency and study achievement of dyslexic children enrolled in immersion education</p> <p>2. <b>Ashley Blake, University of Birmingham</b> - The relationship between cognitive processes and language in adults with Developmental Language Disorder</p> <p>3. <b>Kamble Veena, Université catholique de Louvain</b> - Reading Abilities in Deaf: Influence of the language system on the crowding effect</p> <p>4. <b>Rosie Coppeters, University of Antwerp</b> - A Systematic Review of the Psychoacoustic and Linguistic Markers of Frontotemporal Dementia Across Different Languages</p>
12.40	<b>Lunch</b>
13.50	<p><b>Keynote 2: Prof. Shanley Allen, University of Kaiserslautern</b></p> <p>Title: Does heritage language maintenance in bilinguals affect nativelikeness in the majority language?</p>
14.50	<b>Coffee &amp; Poster session 3 (P3.1 – P3.19)</b>
16.00	<p><b>OpenScience workshop by Dr. Charlotte Eben, Ghent University</b></p> <p>Title: DIY: Open and reproducible Science</p>
17.00	<b>Closing remarks</b>

# Welcome to Ghent!

The city of Ghent first saw the light of day in 630, when the missionary bishop St Amand chose the confluence of the rivers Scheldt and Lys to found St Bavo's Abbey (the older name of Ghent, Ganda, is derived from the Celtic word for 'confluence'). In the Middle Ages, Ghent grew into one of the most important cities in Western Europe. Thanks to the wool trade, Ghent grew so much that it was second in size only to Paris.

Nearly 1400 years of history are still palpable in the city today. Some places to see or visit are (all located close to each other within walking distances):

**St. Bavo's Cathedral:** The oldest parish church in Ghent was built on the site of a previous church dating back to 942. The chapel was then expanded in the Romanesque style in 1038. The Romanesque church is still visible in the crypt. In the 15th century, it was decided to replace the Romanesque structure with a larger Gothic church, which was completed in 1559. In 1540, the church became the seat of St Bavo's chapter and St Bavo immediately became its patron saint. In 1559, the diocese of Ghent was founded and the church became its cathedral.



**Belfry:** Through the centuries, the belfry served not only as a bell tower to announce the time and various warnings, but also as a fortified watchtower and the place where the documents evidencing the municipal privileges were kept. The bells in the belfry originally only served a religious purpose. Gradually the bells got a secular role by regulating daily life in the growing medieval city. Construction on the Belfry began around 1313 and reached completion in 1380.

Ghent's Belfry (a UNESCO World Heritage Site) symbolises the city's independence and proudly holds aloft the alarm bell, which served to protect its citizens.

**St. Nicholas' church:** Next to the Belfry and Saint Bavo Cathedral, the third medieval tower that overlooks the city of Ghent. Erection began in the early 13th century as a replacement for an earlier Romanesque church. Construction continued through the rest of the century in the local Scheldt Gothic style (named after the nearby



river). Typical of this style is the use of blue-grey stone from the Tournai area, the single large tower above the crossing, and the slender turrets at the building's corners. St Nicholas is the protector of merchants and sailors, who raised the money to build this impressive example of the Scheldt Gothic style.



**St. Michael's bridge:** The most photographed and arguably the most scenographic spot in the city. From St. Michael bridge you can admire Graslei and Korenlei with the Old Fish Market and the Castle of the Counts (Gravensteen) in the distance, St Michael's Church, the rear of the building Pand and of course the famous row of towers, which you can only capture neatly lined up in a row from this one spot.



**Gravensteen:** The Castle of the Counts is about the only remaining medieval fortress in Flanders with its defence system still virtually intact.

Take a walk in the city centre, and if you want more information, head to Visit Gent Information Centre, Sint-Veerleplein 5, just across from the Gravensteen, or visit [www.visitgent.be](http://www.visitgent.be).



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# About PiF 2023

## History of Psycholinguistics in Flanders

Psycholinguistics in Flanders (PiF) is a long-standing tradition in Flanders and it involves psycholinguists working in Europe and around the world. It started in 2002 when a group of psycholinguists decided to organize an annual workshop for postgraduates and young postdoctoral researchers in psychology of language. Since then, the conference has been organized yearly, involving major universities in Belgium and the Netherlands. Following some difficult times during the Covid period, the current conference is the first in-person gathering since 2019 and at the same time the twentieth edition of PiF! 🎉

Traditionally, PiF is jointly organized by the Department of Experimental Psychology at Ghent University, the Computational Linguistics and Psycholinguistics Research Center (CLiPS) at the University of Antwerp, and the ConCat research group at KU Leuven.

## Organisers



This year, the Faculty of Psychology and Educational Sciences at Ghent University is organising Psycholinguistics in Flanders. The organisation of PiF is partially supported by the **Research Foundation of Flanders (FWO)**.

*Scientific committee:* Robert Hartsuiker, Louisa Bogaerts, Dominiek Sandra, Sarah Bernolet

*Organising committee:* Louisa Bogaerts (UGent), Marc Brysbaert (UGent), Robert Hartsuiker (UGent), Binger Lu (UGent), Anna Jessen (UGent), Merel Muyllé (UGent), Aurélie Pistono (UGent), Mariia Baltais (UGent), Haoyu Zhou (UGent), Sam Boeve (UGent), Aaron Vandendaele (UGent), Dominiek Sandra (UAntwerpen), Rianne van Lieburg (UAntwerpen), Edwige Sijyeniyo (UAntwerpen).

## Ghent University

The Rijksuniversiteit Gent (State University of Ghent) was officially opened under the rule of King William I on 9 October 1817, which means celebrated its 200 anniversary last year. The first rector was the physician Jean-Charles Van Rotterdam and the official language of tuition was Latin. In 1930, the university became the first institution in Belgium to teach in Dutch and in 1991, the name Rijksuniversiteit Gent was officially changed to Universiteit Gent (Ghent University).

Ghent University is not a campus university. Over the years, the university's sites and buildings were



set up scattered across the city, and today the university has seamlessly fused with the city. Geographically speaking, the university is spread out over and around the city centre. Most of the university buildings are located on the north-south axis, stretching from the historical city centre (including the Aula and Het Pand) to the buildings on the Sterre and the Ghent University Hospital. In terms of origin and style, the university's patrimony is also characterised by its enormous diversity; from the thirteenth century monastery Het Pand, to the classical façades of the Aula Academica, the Plateastraat and the Rommelaere Institute, and the famous Book Tower of Henry van de Velde.

Ghent University has 117 departments across 11 faculties, offering high-quality research-based educational programmes in virtually every scientific discipline. It is the Faculty of Psychology and Educational Sciences that is organising this edition of Psycholinguistics in Flanders.



# Useful information

The Conference venue:

Campus Dunant 2

[\(Henri Dunantlaan 2, 9000](#)

[Gent\)](#)

Talks in Leszaal 1.2

Poster sessions in Bibliotheek 1



As the campus for the [Faculty of Psychology and Educational Sciences](#), Campus Dunant 2 is located close to Watersportbaan area, which features the outdoor water facility for rowing races.

Reaching the venue is very easy:

## By train

You can check the [timetables of the NMBS](#) for detailed information.

From Gent Sint-Pieters railway station, you can easily reach the faculty on foot with a 15 minute walk. You can click the link embedded with the venue building address provided above to access to the google map.

## **By tram or bus**

From Gent Sint-Pieters railway station you can take the tram or bus to the faculty.

- Take tramway 2;
- get off at the Bernard Spaelaan stop;
- cross the parking lot of the Delhaize supermarket;
- when you reach Jubileumlaan (on the other side of the parking lot) go to the right until you reach an intersection;
- Henri Dunantlaan starts on the opposite side of the intersection.

There are two bus stops close to the faculty:

- Beneluxplein stop (bus 9, 38, 39);
- Ekkerger-Kerk stop (bus 14, 15, 65, 69).

Bus 9, 14, 15, 65 and 69 leave from Gent Sint-Pieters railway station.

Visit the website of [De Lijn](#) for detailed information about tram- and bus transport

## **By bike**

Ghent is a city that everywhere is easily accessible by bike. You can rent a bike for the period of the conference with the options below:

- Rent a bike online from fietsambassade and pick it up in one of the pick-up points <https://verhuur.fietsambassadegent.be/en/>. It's for minimum a day and they're bound to a certain pick-up point.
- You can also rent donkey bikes - <https://www.donkey.bike/cities/bike-rental-ghent/>. There they can be rent for a day or for a short trip only and the bikes are all around Ghent to find. You will need to install their app Donkey Republic.

## **Finding the rooms**

Talks – Leszaal 1.2

Enter from the main entrance of the building on the Henri Dunantlaan street. You can choose to use the main staircase or use the lifts (go straight and turn left) to get to the first floor (different from the ground floor). If you take the stairs, turn right and go to the end of the corridor, leszaal 1.2 is on your left. If you take the lift, you will be at the corridor of leszaal 1.2 directly after getting out.

Poster sessions – Bibliotheek 1

The entrance of the room is opposite to the corridor of Leszaal 1.2.

# Social events

## Guided walk

When: 29<sup>th</sup> May; 18.30

Where: St Michael's Bridge (Sint-Michielsbrug)

In the evening on May 29 (Monday) we invite you to our social event: a 2-hour guided walk to Ghent's marvelous street art and graffiti's. *We will gather shortly after the conference at 18.00 and head over as a group but you can also meet us there at St Michael's Bridge at 18.30 directly.*



## Conference dinner

When: 30<sup>th</sup> May; 19.30

Where: Wereldkeuken

On 30<sup>th</sup> of May (Tuesday) the conference dinner will take place at the wonderful Wereldkeuken – the 'world kitchen' – not far from the venue (next to the big Carrefour). There are vegetarian as well as vegan options available.



### Links of the locations on Google Maps:

Wereldkeuken Gent - <https://goo.gl/maps/1AKxGZ1Q8UDF5sr9>

St Michael's Bridge - <https://goo.gl/maps/ccWomLGwZMXDNBrC6>

# **Satellite Symposium**

**In honour of Dominiek Sandra**

**Monday 29<sup>th</sup> 14.10, Leszaal 1.2**

Monday, 29<sup>th</sup> May, 14.10

## **Exploring the limits of language non-selectivity: How do multilinguals process non-native cognates and interlingual homographs in sentences?**

*Lisan Broekhuis*  
*University of Antwerp*

Many studies report cognate or interlingual homograph effects, which suggests that bilinguals and multilinguals cannot suppress the activation of languages that are irrelevant in a (monolingual) context (Costa et al., 2000; Dijkstra et al., 1999; Van Hell & Dijkstra, 2002). However, in many experiments, L1-L2 words have been shown in isolation, while we usually encounter words in a meaningful sentence context. Moreover, there may be a qualitative distinction between the L1 and languages learned later in life (Hernandez et al., 2005) and the L1 readings of interlingual (L1-L2) words are hypothesized to have a “special status” in bi-/multilinguals “because of the key role they play in L2 vocabulary acquisition” (Midgley et al., 2011). Therefore, our experiments present not only L1-L2 but also L2-L3 cognates and interlingual homographs in three contexts that vary in their level of semantic information (isolation, low-constraint sentences, and high-constraint sentences) to examine whether a monolingual L2 sentence context can suppress the activation of the L1 and L3. The processing of these interlingual words will be compared to that of L2 words with similar characteristics, i.e., metonyms and homonyms. If access to the mental lexicon is indeed completely language non-selective, similar effects should be obtained for cognates and for metonyms and the same would apply for interlingual homographs and homonyms.

In the first two experiments, native Dutch speakers that are proficient in English and French will perform a visual English (L2) lexical decision task on cognates and metonyms (Exp. 1) and on interlingual homographs and homonyms (Exp. 2). In our subsequent cross-modal priming experiments, participants will hear an audio-recording of a low-constraint (Exps. 3 and 4) or high-constraint (Exps. 5 and 6) sentence without its sentence-final word. This word (taken from the stimulus list of Exp. 1 or 2) will then be presented in the same manner as in Experiments 1 and 2. We predict that cognate and interlingual homograph effects will be stronger for L1-L2 than for L2-L3 items. Additionally, we hypothesize that these effects will reduce in size or disappear altogether as the level of constraint increases.

Costa, A., Caramazza, A., & Sebastián-Gallés, N. (2000). The cognate facilitation effect: Implications for models of lexical access. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 26(5), 1283–1296. <https://doi.org/10.1037/0278-7393.26.5.1283>

Dijkstra, T., Grainger, J., & Van Heuven, W. J. B. (1999). Recognition of cognates and interlingual homographs: The neglected role of phonology. *Journal of Memory and Language*, 41(4), 496–518. <https://doi.org/10.1006/jmla.1999.2654>

Hernandez, A., Li, P., & MacWhinney, B. (2005). The emergence of competing modules in bilingualism. *Trends in Cognitive Sciences*, 9(5), 220–225. <https://doi.org/10.1016/j.tics.2005.03.003>

Midgley, K. J., Holcomb, P. J., & Grainger, J. (2011). Effects of cognate status on word comprehension in second

language learners: An ERP investigation. *Journal of Cognitive Neuroscience*, 23(7), 1634–1647.  
<https://doi.org/10.1162/jocn.2010.21463>

Van Hell, J. G., & Dijkstra, T. (2002). Foreign language knowledge can influence native language performance in exclusively native contexts. *Psychonomic Bulletin & Review*, 9(4), 780–789.  
<https://doi.org/10.3758/bf03196335>

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Monday, 29<sup>th</sup> May, 14.35

### **Dutch proficiency courses as a window on native language processing**

*Sarah Bernolet*  
*University of Antwerp*

Since I started teaching the same Dutch proficiency courses that Dominiek Sandra had been teaching before me, I realized to what extent Dominiek's research topics were dictated by the behavior of his/our students. Every new writing task contains a wealth of spelling errors, and because most of our students also study a different language than Dutch at university level, we have access to large groups of highly proficient multilinguals. Dominiek's focus on spelling errors and bilingualism was, however, not prompted by pragmatic reasons, but by sincere concerns about his students' native language proficiency, and the motivation to get this proficiency to a higher level. In this talk, I will explain how I want to continue and broaden his work by including different kinds of errors, focusing on different types of bilinguals and studying language production in context.

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Monday, 29<sup>th</sup> May, 15.00

### **Reading instruction in primary education: what does really work?**

*Astrid Geudens*  
*Thomas More University of Applied Sciences*

One of the most central questions in education is how children learn to read and how they can best be taught. Research has provided answers to many of these questions but there remains a wide gap between research and practice in this field. As a consequence, teachers and policy makers are faced with a lot of uncertainty about what actually works to promote early literacy in kindergarten, how to teach and strengthen beginning and advanced reading skills and how to prevent and intervene reading problems. To this end, a consortium of researchers from the University of Antwerp and University colleges Thomas More and Odisee performed an umbrella review, commissioned by the Flemish

minister of education ([www.lesinlezen.be](http://www.lesinlezen.be)) with the central question : *What characterizes effective reading instruction in primary and secondary education and what factors influence it?* In this talk, I will present some highlights of this umbrella review (focus primary education) and provide examples of how we can translate these ideas into practice.

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Monday, 29<sup>th</sup> May, 15.25

### **Why transactions matter in thinking about the language environment**

*Emmanuel Keuleers*

*Tilburg University*

In the past decades, psycholinguistics has convincingly demonstrated that the way humans use and process language is incredibly sensitive to the distribution of language in the environment. Since researchers do not have access to language users' true environment, they have used large text corpora as a proxy to build measures of the environment. Although the effects of these corpus-based measures appear to be very large and robust, there is empirical and analytical evidence that corpora do not offer a faithful representation of the language environment. I will argue that psycholinguistic research requires a framework for understanding the language environment as a transaction record and I will discuss a set of research questions that arise from this framework.



# Keynote Addresses

Monday, 29<sup>th</sup> May, 17.00

**You've already seen it: Parafoveal pre-processing in reading**



*Steven Frisson*

*University of Birmingham, Birmingham, United Kingdom*

One of the more surprising, and often overlooked, discoveries in reading research is the amount of processing that goes on before we fixate a word in a text. Even though readers tend to be unaware that they pre-process upcoming (parafoveal) words, silent reading slows down by 20-40% when parafoveal information is unavailable. The reliance on parafoveal information is also linked to reading skill, with younger readers and readers with reading difficulties extracting less information than skilled readers.

The most telling eye movement evidence for parafoveal processing comes from skipping, i.e. when a word does not receive a fixation, arguably because it has already been processed sufficiently in the parafovea such that lexical access has been achieved and a fixation is no longer necessary. Work by Drieghe and others has shown that words are skipped more often when they are short, high-frequent, and predictable. Other research, often using the gaze-contingent boundary paradigm, also supports the view that at least some, mainly low-level, information can be previewed. However, how much and which kind of information is extracted parafoveally remains highly contentious, which is also reflected in competing models of reading (serial vs. parallel). Moreover, establishing the time course of parafoveal processing from eye movement data alone is highly problematic.

I will first discuss research on parafoveal processing, focusing on alphabetic languages, and highlight some of the shortcomings inherent in current methodologies (such as the boundary change technique). I will then describe the findings from a novel methodology developed in our lab, combining magnetoencephalography (MEG) with eye-tracking and rapid invisible frequency tagging (RIFT), which simultaneously measures neuronal activity linked to attention and eye movements. These studies show that lexical (both frequency and semantic/pragmatic) information is extracted parafoveally, and that this happens much faster than previously assumed, which is difficult to accommodate in serial models such as E-Z Reader. Finally, I will present the outline of a new framework, a pipelining mechanism, which combines notions of both serial and parallel processing and is currently being developed to explain previewing during reading as well as visual exploration.

Wednesday, 31<sup>st</sup> May, 13.50

**Does heritage language maintenance in bilinguals affect nativelikeness in the majority language?**



*Shanley Allen*

*University of Kaiserslautern, Kaiserslautern, Germany*

Heritage speakers are bilinguals who acquire both a family (heritage) language and a societal (majority) language in early childhood. Most research on their use of the majority language has focused on school-aged children in comparison with their monolingually-raised peers. However, much less is known about patterns of majority language use in adolescents and adults. In this talk, we ask whether bilinguals' majority language shows non-canonical patterns as a result of cross-linguistic influence or language contact.

Data are taken from a large-scale project investigating majority English as produced by adolescent and adult heritage speakers of German, Greek, Russian and Turkish as well as English monolinguals in the USA – part of the Research Unit on Emerging Grammars in Language Contact Situations (RUEG). We examine the speakers' patterns for concept lexicalization, clause types, subordination, and left dislocations. Surprisingly, we find little evidence of cross-linguistic influence from the heritage language to majority English, but in some cases find a non-canonical pattern across all groups of heritage speakers regardless of language background. In other words, by the time they grow up, heritage speakers look remarkably similar to monolingually-raised speakers in their use of English.

# **OpenScience Workshop**

Wednesday 31<sup>st</sup> 16.00

Wednesday, 31<sup>st</sup> May, 16.00

**DIY: Open and reproducible Science**



*Charlotte Eben*  
*Ghent University*

In this hands-on workshop, we will focus on one important aspect of the open science: pre-registration. There is a lot of knowledge floating around about pre-registration together with some misconceptions. To counteract these misconceptions, there will be a short introduction on pre-registration, registered reports and different possibilities of pre-registration. This will be followed by a practical part in which the participants will be asked to write their own pre-registration (so please bring your laptop). Eventually, we will discuss questions that come up in the process of writing a pre-registration to prepare you for your first real pre-registration.

# Oral Presentations

# **Talk Session 1: Language Comprehension**

Tuesday 30<sup>th</sup> 9.30

[T1.1] Tuesday 30<sup>th</sup> May, 9.30

**The Role of Individual Differences in the Ability of Generalizing Compositional Meaning**

Anna Petukhova<sup>1</sup>, Xiaochen Zheng<sup>2</sup>, Jonne Roelofs<sup>3</sup>, Lisa Horstman<sup>2</sup>, Roshan Cools<sup>2</sup>

Centre for Language Studies, Radboud University<sup>1</sup>

Donders Centre for Cognitive Neuroimaging, Radboud University<sup>2</sup>

Radboud University<sup>3</sup>

The ability to generalize helps us to adapt easily to novel situations, for example, when inferring the meaning of the compositional word “un-rejectable-ish” on the fly. Previously, Zheng et al. (in prep.) developed a behavioral paradigm in which participants learnt words that consisted of a known stem and an unknown affix (e.g., “kla-rich”, where kla- means the opposite). The affixes were assigned different meanings depending on their position relative to the stem (pre vs. post). After learning, participants performed a semantic priming task consisting of novel words which were constructed using the same structural rules presented in the learning (e.g., “kla-dark”). Turns out, there was a variability in how people constructed new meanings, namely, to what extent people relied on inferring structural rules. We set up a follow-up study to unravel the origins of such behavioral differences, using a set of established tests on individual difference factors that were previously reported to play a role in language learning. Our preliminary results suggest a positive correlation between both domain-general and language-specific abilities and the reliance on structural rules in inferring the meaning of a new word.



[T1.2] Tuesday 30<sup>th</sup> May, 9.45

### **Predicting Compound Words for Imaginary Objects**

Laura Raveling

Humboldt- Universität zu Berlin

In the present work, we investigate which (novel) words speakers use to denote (novel) objects. This may include choosing a non-existing word to label novel stimuli, with compounding being the most productive mechanism involved in this process. It has been hypothesized that distributional semantic models entail cognitively plausible label candidates for concepts. As a consequence, it should be possible to employ these models to create computational simulations of human sender-receiver behavior for compound words. In order to explore that assumption, we are comparing statistically predicted semantic image descriptions with conversational label choices. We set up a generative adversarial neural network and a linear regression model to produce a semantic label embedding for a set of visual objects. Both models should be able to produce a word – including novel compound words – that closely mimics human language production. The current results show that the statistical models reliably predict semantic information present in the visual data.

[T1.3] Tuesday 30<sup>th</sup> May, 10.00

### **A discriminative model of subliminal priming in Maltese auditory word comprehension**

Jessica Nieder<sup>1</sup>, Ruben van de Vijver<sup>1</sup>, Adam Ussishkin<sup>2</sup>

Heinrich-Heine-Universität Düsseldorf, Germany<sup>1</sup>

University of Arizona, USA<sup>2</sup>

Spoken word recognition involves morphology. Some suggest that complex words are decomposed (Taft & Forster, 1975), others that processing involves whole words (Tyler et al., 1988). Both treat words as forms, meaning is left underspecified. The Discriminative Lexicon is different (Baayen et al. 2019). It incorporates meaning in W&P Morphology. Comprehension maps phonology onto meaning, production maps meaning onto phonology. DL is computationally implemented in Linear Discriminative Learning. In our study we use LDL to model production and comprehension of Maltese verbs and measures from LDL to model a subliminal priming study (Ussishkin et al. 2015). We used 10K verbs from a Maltese corpus to represent phonology, and fasttext word-embeddings to represent meaning. LDL is quite accurate: comprehension is at 82% and production is at 83%. We derived two predictors from LDL: Pre-activation of the meaning of a target by its prime and how well the meaning of a prime is supported. This improved the fit of a statistical model of RTs: Differences in priming result from differences in meaning of prime-target pairs. This shows that a model of the lexicon which includes meaning successfully models Maltese verbs and their processing.

[T1.4] Tuesday 30<sup>th</sup> May, 10.15

**ERP data in support of French gender agreement maturation from pre-schoolers to adults**

Phaedra Royle<sup>125</sup>, Karsten Seinhauer<sup>13</sup>, Emilie Courtaeu<sup>4</sup>, Guillaume Blais<sup>12</sup>

CRBLM<sup>1</sup>

Université de Montréal; CIRCA<sup>2</sup>

McGill University<sup>3</sup>

Dalhousie University<sup>4</sup>

REPAR<sup>5</sup>

Francophones are believed to master gender agreement by school age, but psycholinguistic research has shown that gender processing is difficult for French school-aged children. Gender on definite determiners is marked by a predictable vowel (le/la [lə]/[la] ‘theM/F’), but variable adjectives carry unpredictable consonants (e.g., gris/e [ɡʁi/z] ‘greyM/F’).

We investigated gender agreement processing in children (aged 4–8), (pre-)teens (8–16) and adults (18–35) using an audio-visual event related potential (ERP) paradigm. Sentences were grammatically correct (Je vois la clef grise sur la table ‘I see theF greyF key on the table’), or had gender errors on determiners (...\*le clef grise ... ‘theM greyF key’), or adjectives.

Our studies show changing patterns for gender error processing in children, teens and adults, with different patterns observed for determiner and adjective errors in all groups. These data point towards different underlying agreement mechanisms for French adjectives and determiners and continued maturation of agreement processes in teens. This supports the idea that grammar is not yet fully consolidated at the onset of adolescence, and the unpredictability of adjective gender marking may be a source of difficulty.

[T1.5] Tuesday 30<sup>th</sup> May, 10.30

**Undoing gender in a gender-marking language:  
Gender-inclusive forms in plural role nouns in German**

Álvaro Cortés Rodríguez<sup>1,2</sup>, Larissa Specht

<sup>1</sup>University of Tübingen

<sup>2</sup>University of Kassel

In German, the affix *-\*innen* is consolidating as a gender-inclusive alternative to the generic masculine. However, this form has faced criticism for being unlicensed (Eisenberg 2020) and for creating a female bias in interpretation (Körner et al. 2022). Yet, studies have shown that there is a disadvantage for female referents following a generic masculine (Gygax et al. 2008; Misersky, Majid & Snijders 2019). We argue there is an asymmetry between the gender-inclusive and generic masculine plurals, where the former is less marked and can more readily function as an antecedent for feminine and masculine anaphora. We conducted a judgment study to assess the genericity and overall acceptability of the generic masculine and the gender-inclusive plurals. Our results show no main effects for ANAPHORA and MARKEDNESS, but the interaction was significant. A pairwise comparison revealed a significant difference for the anaphora in the generic masculine conditions. This study shows that the gender-inclusive affix *-\*innen* is a viable alternative to the generic masculine form in German and that this gender-inclusive form includes both female and male referents without bias.

# **Talk Session 2: Language Production**

Tuesday 30<sup>th</sup> 11.20

[T2.1] Tuesday 30<sup>th</sup> May, 11.20

**Expression and perception of endpoints during language acquisition: Three studies on Czech**

Anna Marklová

Humboldt University Berlin

The description of goal-oriented motion events differs cross-linguistically. Speakers of languages with a phasal perspective describe the events as a process, while speakers of languages with a holistic perspective emphasize the final state of the event, i.e., an endpoint. For example, when someone walks towards a house, 'holistic speakers' will mention the house (an endpoint) in their description more likely than 'phasal speakers.' This paper investigates the prominence of endpoints in Czech preschoolers in three settings. We examined how often children (n=20) express endpoints in an elicitation task using picture stimuli. In the second experiment, we analyzed how parent-child pairs (n=25) discuss the same images interactively. Additionally, we conducted an exploratory eye-tracking study with children (n=75) using the same stimulus material. Our findings indicate that parent-children interaction is essential in directing children's attention toward endpoints. The eye-tracking data showed that fixation time on endpoints is higher than on other parts of the scene. This study offers insight into how Czech children describe and perceive endpoints, which has not been analyzed previously.

[T2.2] Tuesday 30<sup>th</sup> May, 11.35

### **Predicting Compound Words for Imaginary Objects**

Catherine T. Pham<sup>1</sup>, Nevin Viswanathan<sup>2</sup>

Department of Psychology<sup>1</sup>

Department of Communication Sciences and Disorders<sup>2</sup>

The Pennsylvania State University

Language use often occurs in the context of dialogue with conversation partners shifting between the roles of speaker and listener, but few studies have investigated conversational adjustments beyond the acoustic-phonetic level. This study characterizes syntactic adjustments and explores which metrics, if any, are best suited for capturing speaker modifications in naturalistic conversation. We analyzed unscripted production data from the Wildcat Corpus to assess whether various measures of complexity were able to differentiate different dyad types (native, mixed, non-native pairs) and explored whether speaker modifications in complexity were driven by differences in the speaker's proficiency (native vs non-native), their interlocutor's perceived proficiency (native vs non-native), or a combination of the two. Native speakers produced longer and more clausally-dense Analysis of Speech units (AS-units), more AS-units, clauses, and words per minute, and fewer disfluencies relative to non-native speakers. Additionally, speakers did not modify their production depending on the perceived proficiency of their interlocutor. Overall, our results indicate that these measures can successfully be applied to the study of interaction.

[T2.3] Tuesday 30<sup>th</sup> May, 11.50

### **Repetition leads to long-term suppression of the word frequency effect**

Ruth Corps, Antje Meyer

Psychology of Language Department, Max Planck Institute for Psycholinguistics

Word frequency is a key organising principle in the lexicon. Research has consistently shown that higher frequency words tend to be easier to produce than low frequency words. Most accounts of language production interpret word frequency as a 'counter in the head'—increased exposure to a word alters its frequency and its baseline activation level, making it easier to produce. But what kind of exposure is necessary to alter a word's subjective frequency? We used a picture-naming experiment to investigate whether the frequency effect is a simple repetition priming effect. Participants (N=40) were faster to name high frequency than low frequency pictures on their first presentation but not on their subsequent five presentations, suggesting repetition removed the frequency effect. Importantly, the frequency effect was still absent when participants returned and named these pictures more than two weeks later. These findings suggest repetition altered the lexical representations of low frequency words, making them easier to produce and suppressing the frequency effect. We discuss these results in relation to theories of lexical access.



[T2.4] Tuesday 30<sup>th</sup> May, 12.05

### **Predicting Compound Words for Imaginary Objects**

Sam Boeve<sup>1</sup>, Riikka Möttönen<sup>2</sup>, Eleonore Smalle<sup>13</sup>

Ghent University<sup>1</sup>

University of Helsinki<sup>2</sup>

Tilburg University<sup>3</sup>

Despite the ubiquity of statistical learning, it remains unclear how we learn discrete words from continuous spoken input. Here, we investigated the potential causal and domain-specific role of the articulatory motor system in auditory statistical learning. First, we manipulated the type of motor suppression, i.e. articulatory or non-articulatory, by letting participants whisper or clap their hands while listening to structured speech sounds. Next, we manipulated the type of input, i.e., speech-like vs. non-speech like, during articulatory motor suppression. The first experiment showed that only whispering hindered the learning of transitional structures in linguistic input (i.e., syllables), suggesting a causal role of the articulatory motor for statistical learning. In the second experiment, although articulatory motor activity suppressed learning syllable pairs but not learning tone pairs, there was no two-way interaction. Overall, these findings suggest that the articulatory motor system plays a causal role in learning the transitional structure of linguistic input yet its role in learning non-linguistic input remains ambiguous.

[T2.5] Tuesday 30<sup>th</sup> May, 12.20

### **Choosing referential expressions: The role of animacy and discourse salience**

Yvonne Portele, Markus Bader

Goethe University Frankfurt

Accessibility plays a major role in the choice of referential expressions: shorter expressions are used for more accessible referents. More accessible referents also occupy the sentence-initial position more often than less accessible ones. Inherent (e.g., animacy) and derived properties (e.g., discourse salience) can boost a referent's accessibility status. To explore conflicts between animacy and contextual salience as determinants of accessibility, German-speaking participants were asked to read contexts and then to describe pictures with animate agents and inanimate patients. The main factor investigated was discourse salience, with either agent or patient of the depicted event being established as discourse topic in contexts. Results show: Pronoun rates are higher for animate agents than inanimate patients, independently of which referent was more discourse salient, although salience also had some minor effects. Demonstrative rates are determined by both animacy and discourse status. This suggests that animacy as an inherent property outranks contextually derived discourse salience in the choice of referential expressions. We also discuss combinations of expressions chosen for agent and patient as well as word order patterns.

# **Talk Session 3: Reading & Tools**

Tuesday 30<sup>th</sup> 13.50

[T3.1] Tuesday 30<sup>th</sup> May, 13.50

**Visual-Verbal PAL: a Cross-Sectional Study to Investigate the Role of its Subcomponents in  
Sublexical and Lexical Reading Skills in French**

Matthieu Bignon, Sandrine Mejias, Severine Casalis  
SCALab, CNRS, UMR 9193, University of Lille, France

Literature has suggested that visual-verbal Paired Associate Learning (PAL) is uniquely related to word reading abilities. However, hardly any studies simultaneously control for all the main predictors of reading. Furthermore, it is not clear to which aspect of word reading PAL is related, i.e. lexical or sublexical. Then, PAL is a complex task involving different components and debates remain on which one is the most implicated: i.e. cross-modality, verbal learning or verbal production. This paper presents a cross-sectional study aiming to assess the contribution of PAL and its components controlling for all classical predictors of reading in 231 French Grades 1 and 2 children. Results showed that PAL makes a unique contribution to word and pseudoword reading in French, above the classical predictors of reading and age. Mediation analysis suggests that PAL specifically contributes at both the sublexical and lexical level. Interestingly, the cross-modal component did not contribute to reading scores. However, we argued that the verbal learning component explains the whole contribution of PAL. We discuss this result in the light of the characteristics of the French orthography.

[T3.2] Tuesday 30<sup>th</sup> May, 14.05

### **Does syntactic productivity affect reading? An eye-tracking study on Spanish**

Mariia Baltais, Robert Hartsuiker

Ghent University

Syntactic productivity can be defined as a construction's ability to attract new or existing lexical items (Barðdal, 2008). It has mostly been measured based on attested usage in corpora: e.g., type/token ratio (TTR) reflects realized productivity (Baayen 2009). But are corpus measures predictive of online processing? Here, we recorded eye movements of 66 native speakers reading sentences with the Spanish inchoative construction, which expresses the onset of an event (e.g., romper a llorar, lit. 'break to cry'). It is strikingly productive: a wide range of verbs can fill both the inchoative verb and the infinitive slots, as attested in a corpus (Van Hulle & Enghels, in press). We created two versions for each of 32 critical sentences, with a more productive inchoative in one condition (mean TTR = 0.66, SD = 0.07) and a less productive inchoative in the other condition (mean TTR = 0.22, SD = 0.12). Critical sentences were distributed across two presentation lists and mixed with 204 fillers. We expect higher realized productivity to facilitate processing, yielding shorter reading times, lower probability of re-reading, and/or higher probability of skipping in the infinitive region compared to the lower productivity condition.

[T3.3] Tuesday 30<sup>th</sup> May, 14.20

**Out of sight, out of mind: Investigating the role of salience in the initial processing of morphology  
in SLA**

Georgia Knell<sup>1</sup> & Saioa Cipitria<sup>1,2</sup>

<sup>1</sup>Vrije Universiteit Brussel

<sup>2</sup>Rijksuniversiteit Groningen

This study investigates the contribution of perceptual salience (here orthographic length) to learners' attention, awareness, and acquisition of L2 forms. Participants conducted a reading task in Englishti, a semiartificial language which includes two novel target morphemes, low-salient -o and high-salient -ulp (Simoens et al., 2018). In phase 1, participants receive input flooding of the target morphemes while reading short Englishti texts and answering content questions, then in phase 2 make grammaticality judgments about individual Englishti sentences. Target fixations in both phases measure attention, and a grammatical sensitivity index in phase 2 measures implicit rule learning. A post-task interview probes awareness. We also consider interaction between salience effects, individual learner variables, and incidental vs intentional learning contexts. We hypothesize that participants will exhibit greater attention, awareness, and acquisition of -ulp than -o, after controlling for learner variables and learning context.

Simoens, H, et al. (2018). The effect of perceptual salience on processing L2 inflectional morphology. In S Gass, P Spinner, & J Behney (Eds), *Salience in Second Language Acquisition* (107–130). NY: Routledge.

[T3.4] Tuesday 30<sup>th</sup> May, 14.35

**Letter Recognition Strategies of Emergent Adult L2 Readers: The Role of L2 Knowledge and Cross-Linguistic Transfer**

Julia Edeleva, Gina Do Manh  
FSU Jena

Orthography type (Ktori & Pitchford, 2008) and differences in lexical structure (tri-consonantal roots in Arabic vs. the root-and-affix structure in alphabetic scripts, Randall & Meara, 1988) are claimed responsible for cross-linguistic differences in serial letter processing. We inquired how emergent L2 readers make use of their linguistic knowledge in L2 and their potentially available L1 strategies during letter recognition. We present the results of a visual scan task with emergent adult L2 readers of German. The participants (N=59 L1 Arabic, N=34 L1 Farsi-Dari, N=23 L1 Turkish) were quicker to identify the characters in a word than in a letter string. With L1 Turkish readers, the recognition speed increased from the first to the fifth letter. L1 Farsi-Dari and L1 Arabic readers showed a U-shaped curve with the advantage towards the central position. Lack of the final letter advantage supports sequential letter processing from left to right. The contribution will be supplemented by a more refined statistical analysis as well as letter recognition data from the participants' respective L1s. We will discuss our results in light of cross-linguistic character search strategies as well as transfer of strategies between L1 and L2.

[T3.5] Tuesday 30<sup>th</sup> May, 14.50

**SocioLex: Normative data set of 2,700 Czech words rated along nine dimensions**

Mikuláš Preininger, James Brand, Adam Kříž, Markéta Ceháčová

Faculty of Arts, Charles University

This study introduces the first large scale norms for 2,700 Czech words from over 2,000 participants. The data set provides ratings for five classic psycholinguistic variables (age of acquisition, arousal, concreteness, imageability and valence), in addition to four novel dimensions relating to social aspects of meaning (age, gender, location and political alignment). The relationship between the dimensions is explored, with correlation analyses demonstrating high validity when compared to existing norms in other languages (e.g. in English - Scott et al, 2019), but our novel dimensions also capture distinct aspects of meaning. Patterns that emerged from the data include conservative words being related to older age categories, whilst more urban words are related to middle age categories. Thus, we believe these norms will contribute a new resource for psycholinguists to use and explore further. The practical utility will be discussed in relation to planned experiments on language processing and corpus based research.



[T3.6] Tuesday 30<sup>th</sup> May, 15.05

### **Discuit – a tool for dividing items into equal sets**

Dörte de Kok  
University of Groningen

In psycho- and neurolinguistic research, items often need to be partitioned into a specified number of subsets that are as comparable as possible regarding multiple variables. This enables a reliable comparison between experimental conditions. With Discuit (De Kok, 2023), we created a tool that can do this task automatically, using clustering algorithms. The tool takes a spreadsheet as input and generates the required number of sets, matched on the provided data. These data can be categorical (e.g. 'word class') and/or continuous (e.g. 'word frequency'). Finally, one variable can be marked as "primary". The items will be split perfectly even with regard to this variable (e.g. 'accuracy in pre-treatment assessment').

We have piloted the tool in a recent aphasia treatment study to split the diagnostic items into to-be-trained and not-to-be-trained items for each of the two participants. In this presentation or poster, I will explain the underlying mechanism of the tool, illustrate how it can be used for different purposes and discuss our pilot study as an example use case.

De Kok, D. (2023). Discuit (Version 0.1.0) [Computer software]. Zenodo. <https://doi.org/10.5281/zenodo.7671857>

# **Talk Session 4: Language Context & Prediction**

Tuesday 30<sup>th</sup> 16.30

[T4.1] Tuesday 30<sup>th</sup> May, 16.30

### **Modeling compound word relational interpretations with contextualized word embeddings**

Marco Ciapparelli, Marco Marelli

University of Milano-Bicocca

According to psycholinguistic theories, processing a compound word (“snowman”) involves its automatic decomposition into its constituents (“snow”, “man”), then connected by an implicit semantic relation (“made of”) to obtain a plausible interpretation (“man made of snow”). However, the appropriate relation is often not univocal and must be selected from a set of competitors. In this study, we investigated whether contextualized word embeddings (cwe) capture human intuitions on compounds’ interpretations. We used BERT-base to obtain cwe of compounds in context (e.g., “We built a [snowman] in our garden”). Then, we systematically replaced compounds with paraphrase variants in which candidate relations were made explicit (e.g., “We built a [man made of snow] in our garden”). We then computed the similarity between the original compound cwe and its multiple variants. We find that these similarities predict participants’ interpretations (i.e., the probability of selecting a given relation) and their degree of conflict. Thus, we show that cwe can be leveraged to generate semantic representations for linguistic units that are not directly observable in text, but which have been shown to influence compounds’ representation and processing.

[T4.2] Tuesday 30<sup>th</sup> May, 16.45

### **Effects of predictability and plausibility on context updating**

Miriam Brockmeyer

Ludwig-Maximilians-Universität München

The current study examines the processing of semantically impossible relative to unpredictable yet plausible and predictable input. In a self-paced reading task combined with an end-of-sentence plausibility judgment task, participants read highly constraining sentences ending in impossible, unpredictable, or predictable nouns. Reaction times were analyzed for the target word, the separately presented period, and the plausibility judgment. In all three regions, reaction times were significantly slower for unpredictable endings than for impossible or predictable ones, while impossible words were read slightly slower than predictable ones only on the target word segment. The results suggest that impossible completions were processed with less effort than unpredictable ones, presumably because they could be quickly judged impossible. Unpredictable completions may have prompted updating of the context model to accommodate the unexpected input. An ongoing follow-up study explores whether the more effortful processing leads to better memory of unpredictable sentence completions relative to impossible ones. In future work, we want to test whether the pattern of results changes if participants do not judge the plausibility of sentences.

[T4.3] Tuesday 30<sup>th</sup> May, 17.00

**The effect of log forward transitional probability on verb production**

Solveig Castelli<sup>1,2,3</sup>, Audrey Bürki<sup>2</sup>, Srdjan Popov<sup>1</sup>, Roel Jonkers<sup>1</sup>

University of Groningen, CLCG, Groningen, The Netherlands<sup>1</sup>

University of Potsdam, Potsdam, Germany<sup>2</sup>

International Doctorate for Experimental Approaches to Language and Brain (IDEALAB)<sup>3</sup>

The current study investigates whether speakers make use of probabilistic knowledge of noun-verb co-occurrence in order to facilitate verb production. In sentences, it is obvious that certain words are more likely to be used than others given the context. For example, the noun ‘fox’ can be used in both “The fox is hunting” and “The fox is sleeping”, with the former having a higher noun-verb co-occurrence probability.

We made use of the picture-word interference paradigm where participants saw a written noun appearing on the screen followed by an image of an event they had to name. In one condition, the target verb had a higher probability of co-occurring with the preceding noun while in the other condition, it had a lower probability.

Verbs in the higher probability condition were named 51 ms faster than in the lower probability condition. These results suggest that speakers can make use of probabilistic knowledge of noun-verb co-occurrence in order to facilitate verb production. Because words that often co-occur together can be semantically associated, future research will attempt to shed light on the source of the effect: semantic relatedness or probabilistic knowledge.

[T4.4] Tuesday 30<sup>th</sup> May, 17.15

### **Effective speech rate on global and local prediction**

Kesnia Nowak, Nadezhda Kushina, Leigh Fernandez, Shanley Allen  
University of Kaiserslautern-Landau

A growing body of research shows that second language (L2) speakers can use multiple sources of information to anticipate forthcoming linguistic information, and that the prediction mechanisms are similar for both L1 and L2 speakers. The existing differences can be attributed to individual (e.g. Kaan, 2014) or methodological factors (e.g. Schlenter, 2022). Previous studies on prediction have mostly focused on cumulative or global predictions, where prediction is based on the combination of all words as they are parsed. Few studies have investigated immediate or local predictions, where prediction is based only on the word currently being processed (Peters et al., 2017). The current series of studies is a conceptual replication and extension of Peters et al.'s work (2018) at different speech rates (3 or 4 syllables per second). Preliminary analyses from our ongoing study (n=20) indicate that L2 speakers make global and local predictions, with more predictions made at faster speech rates. Language proficiency does not seem to affect prediction behaviour. We will discuss theoretical and methodological contributions that can help to make prediction research more consistent.

[T4.5] Tuesday 30<sup>th</sup> May, 17.30

**Using of morphological cues on predictive language processing: A visualworld eyetracking experiment**

Dato Abashidze<sup>1</sup>, Mariam Kobuladze<sup>2</sup>, Natalia Gagarina<sup>1</sup>

The Leibniz-Centre General Linguistics, ZAS<sup>1</sup>

Batumi State University<sup>2</sup>

Eye-tracking research revealed visual context effects on sentence processing when people listened to a verb related to a recently seen event or a plausible future event. Other studies that tested morphosyntactic cues in predictive language processing revealed mixed results. The current study (N=24) assessed to what extent visual context effects can be modulated by an early morphosyntactic cue in Georgian. Participants viewed a videotaped actor performing an action and then heard a sentence (e.g., eksp'eriment'at'or-ma daamarila uk've k'it'r-I, 'Experimenter-ERG salted:AOR.3SG recently cucumber-NOM') referring to that recently performed action or listened to an alternative sentence (e.g., eksp'eriment'at'or-i daamarilebs male p'omidor-s, 'Experimenter-NOM salt:FUT.3SG soon tomato-DAT') referring to an equally plausible action that the actor would perform next. Eye-tracking data of the preference for viewing either the recent- and future-event objects were analyzed. The results, crucially, revealed that the use of early morphosyntactic cues increased the probability of anticipation of the plausible future-event (compared to previous studies); however, these cues were insufficient to eliminate the overall recent-event preference.

[T4.6] Tuesday 30<sup>th</sup> May, 17.45

**“She filled the cookie jar”: A partially filled cookie jar is constitutive of the corresponding event representation**

Emma Wing, Gery Altmann  
University of Connecticut

Reference to telic state-change events (fill the cookie jar) activates representations of the cookie jar in its initial (empty) and end (full) states (Prystauka et al, 2023). Although intermediary states are activated by imperfective aspect (Minor et al, 2022; see (a) below), it is unknown whether intermediary states are also activated by the perfective aspects in (b)-(c):

- a) She was filling the cookie jar.
- b) She filled the cookie jar.
- c) She has filled the cookie jar.
- d) She spotted the filled cookie jar.

Across three timed sentence-picture verification experiments carried out online (N=275+ per expt.), we compared activation of initial, intermediary, and end states by conditions (b)-(d). All conditions were anticipated to activate end states. However, representations of objects as they would appear at the beginning, and importantly, the middle of events were also activated (evidenced by faster RTs to depictions of these states in (b) and (c) than in (d)). The perfectives, (b) and (c), yielded identical patterns, including that end states appear to have a special status in these cases. Crucially, intermediary states are constitutive of event representations even for perfectives.



# **Talk Session 5: Multilingualism**

Wednesday 31<sup>st</sup> 9.30

[T5.1] Wednesday 31<sup>st</sup> May, 9.30

**Sustainability: A New Approach to Understanding Bilingual Speech Planning**

Guadalupe A. Mendoza<sup>1</sup>, Judith F. Kroll<sup>1</sup>, Eve Higby<sup>2</sup>, Samantha Ramos Gomez<sup>3</sup>, Taomei Guo<sup>4</sup>, David  
A. Rosenbaum<sup>3</sup>

University of California, Irvine<sup>1</sup>

California State University, East Bay<sup>2</sup>

University of California, Riverside<sup>3</sup>

State Key Laboratory of Cognitive Neuroscience and Learning; IDG/McGovern Institute for Brain  
Research, Beijing Normal University<sup>4</sup>

To overcome the parallel activation of two languages, bilinguals acquire an exquisite mechanism of control. That problem has been studied in bilingualism research by examining ease of production for each language. Our novel approach borrows from action planning to develop a measure of sustainability that reflects metacognitive processes when bilinguals speak each language. The hypothesis is that task ease (1) draws on cognitive resources shared across action and language planning. Mandarin-English bilinguals completed production tasks in both languages and made a novel judgment asking how well they could sustain speaking in each language. Picture naming was slower in L1 when it followed L2, a result that reflects the regulation of the dominant language (2). Sustainability judgments reflected preferences for the L1, and was affected by the order of picture naming, suggesting that it also represents a measure of cognitive control during language use.

(1) Fegghi, & Rosenbaum (2022) Determining the relative difficulty and preferred ordering of mental and physical tasks. JEPHPP.

(2) Misra, Guo, Bobb, & Kroll (2012) When bilinguals choose a single word to speak: Electrophysiological evidence for inhibition of the native language. JML.

[T5.2] Wednesday 31<sup>st</sup> May, 9.45

### **The development of L2 syntactic representations in production and comprehension**

Rianne van Lieburg<sup>1</sup>, Robert Hartsuiker<sup>2</sup>, Sarah Bernolet<sup>1</sup>

University of Antwerp<sup>1</sup>

Ghent University<sup>2</sup>

In the developmental account of L2 syntax, abstract structural priming increases with increasing proficiency, whereas lexically-dependent priming decreases during development (Hartsuiker & Bernolet, 2017). We tested 576 L1 Chinese-L2 English and 576 L1 Dutch-L2 English bilinguals on ditransitives in English to investigate whether these proficiency effects (as observed in choice data in production) are also found in the onset latencies of the produced responses, and whether similar proficiency effects can be observed in structural priming in comprehension for both choices and reaction times (using the maze task, a variant to self-paced reading). Proficiency modulated priming in the production onset latencies as well as in comprehension, but the observed polarity of the correlation between priming and proficiency was not consistent. The data suggest a hybrid developmental account, which assumes an interplay between explicit memory, residual activation and implicit learning, which in turn determines the magnitude of priming at different stages of L2 development.

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

[T5.3] Wednesday 31<sup>st</sup> May, 10.00

**Suffixes common to French and English can both help and hinder learning of English words in late bilinguals**

Amélie Menut<sup>1,2</sup>, Marc Brysbaert<sup>2</sup>, Séverine Casalis<sup>1</sup>

University of Lille<sup>1</sup>

Ghent University<sup>2</sup>

This research focused on the impact of the native language (L1) on second language (L2) word acquisition. We hypothesized that common morphological features between L1 and L2 could benefit complex word acquisition in L2. We explored the question using a group of 76 French-English late bilinguals. They learned a list of 80 English-derived words over two days and consolidation was evaluated one week after. Half of the items contained suffixes common to French and English (e.g., -able); the other half had suffixes unique to English (e.g., -ness). The results showed a significant learning effect across learning moments and consolidation one week later. However, common suffixes did not benefit word learning over L2-unique suffixes. Extra analysis revealed that common suffixes only help when suffixes are the same in the French word and its English translation (e.g., étonnement-amazement). They, however, seem to hinder learning when suffixes' translations are different (e.g., glissement-slippage). Common suffixes' mapping inconsistencies may not offer strong and regular help for French speakers learning English. In conclusion, the results tackle the hypothesis that similar features between L1 and L2 are facilitative for L2 learning.

[T5.4] Wednesday 31<sup>st</sup> May, 10.15

**When bilinguals switch without a cue: voluntary language switching in a sentence context**

María Sánchez, Esli Struys, Mathieu Declerck  
Vrije Universiteit Brussel

Bilinguals around the world seem to switch back and forth between their languages seamlessly, yet few language switching studies have found conditions in which there is no significant cost to switching languages. Since language-switch costs are a measure of language control, this could be seen as evidence for the ubiquity of this process in bilingual language production. However, one claim is that ecologically valid bilingual contexts lead to small or even absent switch costs. To further investigate this, we examined voluntary language switching between sentences. This ecologically more valid setup (compared to the more prominent involuntary language switching setup with single word production) resulted in switch costs for sentences produced in the second language, but no significant switch costs for sentences produced in the first language, whereas involuntary language switching between sentences resulted in substantial switch costs across both languages. These results indicate that more ecologically valid contexts can lead to circumstances that might require little to no language control.

[T5.5] Wednesday 31<sup>st</sup> May, 10.30

**The effects of typographic enhancement and attention on the development of explicit and implicit**

**L2 collocation knowledge**

Eva Puimège<sup>1</sup>, Aysen Tuzcu<sup>2</sup>

KU Leuven<sup>1</sup>

Michigan State University<sup>2</sup>

In an approximate replication of Toomer and Elgort (2019), we examined the effects of reading with and without typographic enhancement on L2 learners' implicit and explicit collocation knowledge. Like the original study, our replication adopted a within-participants design. Data were collected from 66 EFL learners in Flanders (L1 = Dutch). Participants read nine texts containing repeated occurrences of 15 low-frequency medical collocations (e.g., cloud baby), while their eye movements were recorded. They completed posttests of explicit (cued recall, form recognition) and implicit (primed lexical decision task) collocation knowledge.

Results were analyzed in mixed effects logistic regressions (cued recall and form recognition) and linear mixed models (priming test, eye-tracking data). We analyzed both early and late eye-tracking measures for the full target collocations and their component words in each contextual exposure. We will discuss theoretical and pedagogical implications of our findings concerning the role of input enhancement in L2 collocation learning. We will also discuss the methodological benefits and constraints of eye-tracking and priming tasks as measures of L2 collocation knowledge.

[T5.6] Wednesday 31<sup>st</sup> May, 10.45

### **How Language Experience Impacts Cognitive and Psychological Factors for Heritage Speakers and Language Learners**

Nicholas Sulier, Judith Kroll, Julio Torres  
University of California, Irvine

Individual differences can explain variation in the linguistic abilities of additional language (Ln) learners and heritage language (HL) speakers 1,2. However, it is unclear how language experience modulates these effects. Also relevant are the interactions of cognitive and psychological factors with language performance. The current study explored the role of individual differences in motivation, grit, working memory, and cognitive control among 42 Ln and HL bilinguals' English and Spanish proficiency. Participants completed a battery of tasks. Linear regression analyses revealed that working memory affected English and Spanish performance in HL speakers, but only Spanish performance in Ln learners. A significant relationship also emerged between motivation and Spanish performance that was unique to Ln learners. Together, these findings suggest that the form of language experience is critical in shaping the contribution of cognitive and psychological factors.

1 Li, S., Hiver, P., & Papi, M. (Eds.). (2022). *The Routledge handbook of second language acquisition and individual differences*. Taylor & Francis.

2 Montrul, S., & Polinsky, M. (Eds.). (2021). *The Cambridge handbook of heritage languages and linguistics*. Cambridge U. Press.

# **Talk Session 6: Clinical Psycholinguistics**

Wednesday 31<sup>st</sup> 11.30



[T6.1] Wednesday 31<sup>st</sup> May, 11.30

**Language proficiency and study achievement of dyslexic children enrolled in immersion education**

Chloé Parmentier<sup>1</sup>, Morgane Simonis<sup>1</sup>, Luk Van Mensel<sup>2</sup>, Philippe Hiligsmann<sup>1</sup>, Benoît Galand<sup>1</sup>,  
Nathalie Lefèvre<sup>1</sup>, Laura Ordonez Magro<sup>1</sup>, Arnaud Szmalec<sup>1</sup>

Université catholique de Louvain<sup>1</sup>

Université de Namur<sup>2</sup>

One timely and important question that has hardly been investigated is the extent to which immersion education might be an inclusive environment especially towards children with learning disabilities. This study aimed at investigating whether dyslexia can be considered as a risk factor for children and adolescents attending immersion education. To address this question, 5th grade and 11th grade French-speaking pupils with diagnosed dyslexia and matched controls were identified within a sample of over 800 participants involved in a large-scale study about immersion education in Belgium. A first analysis showed that the proportion of pupils with dyslexia enrolled in immersion does not differ from the proportion of pupils with dyslexia schooled in traditional education. Secondly, our results do not reveal any major disadvantage for children and adolescents diagnosed with dyslexia to participate in immersion education, neither in terms of French literacy, of foreign language proficiency or of school achievement. These findings will be particularly valuable to parents, education actors and speech therapists who are confronted with questions about the accessibility of immersion education for atypically developing children.

[T6.2] Wednesday 31<sup>st</sup> May, 11.45

**The relationship between cognitive processes and language in adults with Developmental Language Disorder**

Ashley Blake<sup>1</sup>, Ewa Dabrowska<sup>1,2</sup>

University of Birmingham<sup>1</sup>

Friedrich Alexander University, Erlangen<sup>2</sup>

People with Developmental Language Disorder (DLD) have difficulties learning and using language in their everyday life. Although DLD is typically diagnosed in childhood, problems often persist into adulthood, however this area is under-researched in comparison to child research into DLD. In this study, we explored cognitive predictors of linguistic ability in adults by investigating processes such as non-verbal IQ, statistical learning, language aptitude, and automatization. 30 adults with DLD and 30 adults with typically developing language participated in an online study. Preliminary analysis indicates group differences across all measures. In the DLD group, we found a relationship between non-verbal IQ and grammatical measures (but no correlation with vocabulary), and a relationship between language aptitude and receptive grammar. Our measure of statistical learning correlates with receptive grammar and vocabulary, but also with IQ (indicating that our measure may tap into different abilities). Lastly, we found a relationship between measures of automatization and grammar, suggesting that adults with DLD have a slower speed of automatization.

[T6.3] Wednesday 31<sup>st</sup> May, 12.00

### **Reading Abilities in Deaf: Influence of the language system on the crowding effect**

Veena Kamble<sup>1</sup>, Kashyap Sahana<sup>2</sup>, Suma Raju<sup>2</sup>, Virginie Crollen<sup>1</sup>

Institut de recherche en sciences psychologiques- Université catholique de Louvain, Louvain-la-Neuve, Belgium<sup>1</sup>

JSS Institute of Speech and Hearing, Mysuru, India<sup>2</sup>

There is evidence that deaf individuals present enhanced attention allocation to the periphery in low-level visual perception tasks. However, studies examining the impact of this redistribution of attention on the deaf reading skills are still scarce. The present study aims to explore how deaf and hearing adult readers identify letters and symbols in the periphery. To do so, we examined the crowding effect, the difficulty to identify a target object when surrounded by flankers, in a 2-alternative forced choice task. Letter and symbol characters were presented briefly in the right or in the left visual field, either in isolation or surrounded by two flanking characters. Two distinct language systems (English vs. Kannada) were moreover compared. While English is an alphabetic language with a linear visuo-spatial structure, Kannada is an Indian alphasyllabry language involving complex visuo-spatial assembly. Indeed, crowding manifested in both groups and in both languages. No periphery advantages were shown in the deaf group. However, deaf participants presented higher accuracy with Kannada letters while the hearing group performed better with English letters. These effects are discussed in light of the specificities of each language.

[T6.4] Wednesday 31<sup>st</sup> May, 12.15

**A Systematic Review of the Psychoacoustic and Linguistic Markers of Frontotemporal Dementia  
Across Different Languages**

Rosie Coppieters<sup>1</sup>, Rose Bruffaerts<sup>1</sup>, Stephanie De Keulenaer<sup>1</sup>, Arabella Bouziges<sup>2</sup>, Lize Jiskoot<sup>3</sup>,  
Maxime Montembeault<sup>4</sup>, Jon Rohrer<sup>2</sup>, Gwen van Nuffelen<sup>5</sup>

University of Antwerp<sup>1</sup>

University College London<sup>2</sup>

Erasmus MC<sup>3</sup>

McGill University<sup>4</sup>

University Hospital Antwerp<sup>5</sup>

Frontotemporal dementia (FTD) is a debilitating neurodegenerative disease with an annual incidence rate of 2.36 cases per 100,000. Speech and language changes occur in the early stages of FTD and offer a potential non-invasive, early, and accessible diagnostic tool. The use of speech and language markers is limited by the fact that most studies investigate English-speaking patients. Our systematic review examined the literature on psychoacoustic and linguistic features of speech that occur in discourse across the FTD spectrum. Our objective was to find similarities and differences across as many different languages as possible. The initial search of Web of Science and Scopus yielded 3771 papers which were narrowed down to 419 papers by triaging the abstracts. Finally, we have identified 81 papers that investigate psychoacoustic and linguistic markers in discursive speech. 61 of these papers study English patients, the remaining 20 papers are Greek, Spanish, Czech, Italian, French, German, Dutch, Hindi, Russian, Korean. Some psychoacoustic features such as speech rate and pausing behaviour were more generalisable and widely studied across languages compared to most linguistic features, which tended to be more language specific.

# Poster Presentations

# **Poster Session 1**

## **(P1.1 – P1.17)**

Monday 29<sup>th</sup> 15.50

[P1.1]

## **Exploring the modulation of object states by tense in sentence processing**

Emma Wing<sup>1</sup>, Pasha Koval<sup>1, 2</sup>, & Gerry Altmann<sup>1</sup>

<sup>1</sup>University of Connecticut

<sup>2</sup>New York University Abu Dhabi

This paper presents a series of 3 experiments investigating the interaction of tense and event structure during sentence processing. The results demonstrate that event-internal content is modulated by tense, and that the parser prioritizes tense information over event structure information when allocating resources. Specifically, when tense is held constant throughout an experiment, participants exhibit a particular activation pattern in response to different object states. However, when tense is added as a factor to the same experimental design, the activation pattern of the same stimuli changes drastically.

Exps 1 and 2 measure the activation patterns of object states in single tenses (past and future, respectively), while Exp 3 examines how the same patterns are modulated by different tenses in the same experiment. Our findings provide insight into how tense and event structure are integrated during sentence processing, with implications for theories of language comprehension and parsing. Previous research has shown that event-internal content is modulated by changes in lexical and grammatical aspect (Santin et al, 2020; Minor et al, 2022). This study extends those findings by exploring the effects of tense on event structure.

[P1.2]

### **Sensory language elevates food attractiveness by activating sensory experience**

Thu Anh Mai

Centre for Language Studies, Radboud University

Grounded cognition theories propose that sensory information is simulated during language processing, causing foods described with sensory words to be more attractive. Previous studies however only found correlational evidence for this. We investigated the role of sensory simulation on food attractiveness by manipulating descriptions (sensory vs. non-sensory) for healthy and unhealthy foods, adding a simulation interference (eating vs. non-eating) manipulation. Sensory descriptions increased food attractiveness, and this was mediated by simulation of olfaction, interoception, and haptics. The effect of olfactory simulation was stronger when participants imagined a non-eating activity, suggesting a causal effect of olfactory simulation on increased food attractiveness. In addition, healthier foods were more strongly associated with increased food attractiveness, mediated by simulation in all modalities except audition, and this was not affected by simulation interference. In general, results support grounded theories of language comprehension and suggest that sensory simulation is important in real-world behavior such as making healthy food choices.



[P1.3]

### **Resisting Grammaticalization: The Semantics of Romance *a* and *de* in the Nominal Domain**

Nadia Takhtaganova  
University of Toronto

This study explores cross-linguistic differences in the choice of the Romance functional prepositions *A* 'at' or *DE* 'of' to head a postnominal PP accounted for by the semantic relationship between the head (N1) and dependent (N2) nouns. The choice of *A/DE* to mark NP dependencies is subject to cross-linguistic variation. While French uses *à* to link the head and dependent nouns in the expression *vernis à ongles* 'nail polish', Spanish uses *de* in the corresponding *esmalte de uñas*, in spite of the lexical correspondence between *vernis/esmalte* 'polish' and *ongles/uñas* 'nails'.

A corpus study was conducted of TED talk data in French, Spanish, and Italian, looking at parallel translations of spoken data and involving extraction of tokens of *N+a/de+N* sequences ( $n = 34\ 036$ ). Crucially, while *DE* mediates a variety of relationships between N1 and N2, the relationships encoded via *A* were mainly with nouns in locative relations with each other, or in relations predicted by the grammaticalization of Goal *A*, like purpose and possession (Hopper and Traugott 2004). The implications of this contrast invite discussion as to the conceptual content of other 'light' or functional prepositions cross-linguistically, especially in nominal subordination.

[P1.4]

### **Gender congruency effects in Spanish: Behavioral evidence from noun phrase production**

Ruixue Wu  
Leiden University

Grammatical gender as a lexico-syntactic feature has been well explored, and the gender congruency effect has been observed in Germanic (e.g., Dutch, German) and other languages (e.g., Croatian, Cze, etc.). Yet, the effect has not been found in Romance languages such as Italian, French, and Spanish. It has been argued that the absence of the effect in Romance languages is due to the fact that the gender-marking definite article is not exclusively depend on the grammatical gender of the head noun, but also on its onset phonology (e.g., *lo zucchero* ‘the sugar’ in Italian, not *il zucchero*). For Spanish, this argument has been made because feminine words starting with a stressed /a/ take the masculine article (e.g., *el agua* ‘the water’, not *la agua*). However, the number of words belonging to that set is rather small in Spanish, and it may be questionable whether this feature can be taken as an argument for the absence of a gender congruency effect in Spanish. In this study, we explored the gender congruency effect in native Spanish noun phrase production. Results revealed significantly longer naming latencies in gender-incongruent and semantically related conditions compared to gender-congruent and semantically unrelated conditions.

[P1.5]

**Predicting false memories with data-driven computational models: the role of visual and semantic similarity in the DRM paradigm**

Francesca Rodio<sup>1</sup>, Marco Petilli<sup>1</sup>, Daniele Gatti<sup>2</sup>, Luca Rinaldi<sup>2</sup>, & Marco Marelli<sup>1</sup>

<sup>1</sup>University of Milano-Bicocca

<sup>2</sup>University of Pavia

The Deese–Roediger–McDermott paradigm (DRM) involves presenting lists of words and later testing participants' memory for these words. It has been found that novel words tend to be erroneously recognised as part of the memorised list when they are semantically related to the memorised ones. While the role of semantic similarity in generating false memories is well established, less is known about whether visual similarity contributes to this phenomenon. To investigate this issue, we adopt a data-driven computational approach to independently quantify visual and semantic similarities for the referents of words and image stimuli to be presented in three DRM variants and tested their effects on false memory generation. Our results show that false memories consistently increase for novel words and images that are visually and semantically similar to those presented in the memorised lists, with a larger extent of visual and semantic similarity in the DRM with images and words, respectively. These findings indicate that visual and semantic memory are both involved in memory distortions, regardless of whether the information is presented in a visual or linguistic format.

[P1.6]

## **Multilingualism as protection against cognitive decline in the elderly**

Aldona Rzitki  
University of Bern

Older and multilingual people are an increasingly important part of our society. Yet there is little systematic research on the language of older people and the impact of multilingualism on their cognition. Recent research suggests that long-term bilingualism can improve certain cognitive skills and buffer neurodegenerative diseases such as dementia. The aim of this talk is to present my PhD project and show the first results.

With the help of monolingual German and bilingual German-Polish participants, who will be tested on their language skills with the help of a language proficiency test and whose individual factors and language biographies will be assessed with the help of a survey, it will be investigated how multilingualism affects cognitive skills. For this purpose, the test persons will be asked to complete an established screening for executive functions as well as the Stroop Test, which specifically measures the inhibition of the cohorts. It is expected that the bilingual cohort will have better cognitive skills.

Bialystok, E., & Sullivan, M. D. (2017). *Growing Old with Two Languages: Effects of Bilingualism on Cognitive Aging*. John Benjamins Publishing Company.

[P1.7]

### **Time Telling in German, Czech and Russian: a cross-linguistic study**

Elena Panfilova

Technical University of Dortmund

As experienced speakers we never consider how to put a time information into words. However, there are two different but completely interchangeable forms of time expressions: absolute (e.g., two-twenty) and relative systems (e.g., twenty past two). This study investigates preferences for different time expressions in three languages: German, Czech and Russian. Among others, we examined the reference-point hypothesis. We analyzed if there was a tendency for the change of expression type in the vicinity of reference points. Time expressions were collected in an elicitation paper-and-pencil task from Czech, Russian and German students (n=396). The results show that German and Czech speakers mostly use relative expressions whereas Russian participants display no clear preferences in the choice of time system. Our further analysis of Czech and Russian expressions revealed a tendency for the change from the absolute to relative system near the hourly reference point. On the other hand, in German more variable expressions were obtained around the half-hour-region, where the reference point switches from the past to the coming hour. Our results provide new insides into the time telling tradition in various languages.

[P1.8]

**When labeling your feelings makes you feel more intense: how emotion labeling and individuals' worry-level affect emotional responses to sentences**

Zhenyang Xi & David Vinson  
University College London

Emotion labeling has been widely reported to down-regulate negative emotional responses to aversive stimuli and is often used in therapeutic contexts. There are several proposed mechanisms: 1) distraction, 2) symbolic conversion, 3) reduction of uncertainty, yet evidence for them is mixed. Additionally, it is questionable whether the effect of emotion labeling is universal. Previous studies treated people equivalently and hardly any considered linguistic stimuli. To better assess the mechanisms and understand the role of verbalization in emotion regulation, this study examined how emotion labeling influenced people's self-reported emotion intensity after reading both positive and negative sentences. Individual differences relevant to emotion processing and regulation were also measured using the Penn State Worry Questionnaire. We found that emotion labeling significantly increased emotion intensity vs. no labeling, contradicting previous findings of down-regulation. For negative sentences, this effect was only observed for people who were less worried. High-worry participants may attend more to negative emotions in sentences even when not directly instructed to do so, highlighting the need to consider individual differences.

[P1.9]

### **Garden-path sentences and the diversity of their (mis)representations**

Markéta Ceháková & Jan Chromý  
Charles University

It is assumed that comprehenders often fully reanalyze the syntactic structure of garden-path sentences (GPs) but fail to delete the initial misinterpretation from their memory [1]. We use a combination of quantitative (logit mixed effect models) and qualitative analysis to show that resulting representations of GPs are in fact rather diverse, varying both in their faithfulness to the presented input and in their internal coherence.

We conducted four self-paced reading experiments (N=159, N=158, N=179, N=141) with 48 Czech GPs. We employed yes–no and open-ended comprehension questions to explore various parts of the sentences' final representations. The response accuracy was around 70% across all four experiments. Even though participants built a coherent and faithful representation of GPs in most cases, responses to open-ended questions also showed that they sometimes maintained multiple local interpretations at once or even failed to build a coherent representation altogether.

Slattery, T.J. et al. (2013): Lingering misinterpretations of garden path sentences arise from competing syntactic representations. *Journal of Memory and Language*, 69(2), 104–120.

[P1.10]

### **Investigating distinct components of Stroop interference and facilitation using pinyin**

Yicheng Qiu & van Heuven Walter  
University of Nottingham

Research has suggested that Stroop effects have different loci that are related to response, semantic, and task processing (Augustinova et al., 2019). Qiu & van Heuven (in preparation) also found evidence for those components in a Stroop task with Chinese characters. However, there is limited evidence of Stroop effects with an alphabetic transcription of Chinese characters (pinyin), which links directly to phonology. To investigate semantic and phonological processing when Chinese characters are written in pinyin, a series of Stroop experiments were conducted. The results revealed Stroop interference and facilitation effects with pinyin words. Interestingly, strong task conflict and semantic facilitation were observed, but there was no phonological facilitation. This suggests the contribution of task conflicts for Stroop interference and semantic facilitation for Stroop facilitation.

Augustinova, M., Parris, B. A., & Ferrand, L. (2019). The Loci of Stroop Interference and Facilitation Effects With Manual and Vocal Responses. *Frontiers in Psychology*, 10(1786), 1786.

Qiu, Y., van Heuven, W. J. B. (in preparation). Distinct Components of Stroop Interference and Facilitation: The role of phonology and response modality in Chinese.



[P1.11]

### **The role of the left perceptual span in L2 reading: An eye-tracking study**

Agnesa Xheladini, Leigh Fernandez & Shanley Allen  
Rhineland-Palatinate Technical University of Kaiserslautern-Landau

Substantial cognitive resources are required for processing the foveal area, leaving fewer cognitive resources available for parafoveal processing. Proficient native (L1) readers have a perceptual span of 3-4 characters left and 14-15 right of the foveal fixation<sup>1</sup>. Given that second-language (L2) processing requires more cognitive resources<sup>2</sup>, it stands to reason that L2ers will have a smaller span than L1ers. We hypothesize L2ers will have a smaller, more symmetrical span relative to L1ers, allowing them to make use of the left span to reconfirm what they previously read.

We test the symmetry of the perceptual span using the GCMWP3 and manipulate the information available (3,6,9 characters-left/3,9,15 characters-right). Additionally, we account for the influence of English skills with German L1ers/English L2ers reading in English (n=53). L2ers benefit from an increase of window size 3-6 to the left of fixation and from 3-9 to the right of fixation, with only higher-skilled L2ers further benefiting from an increase in window size up to 15 characters to the right of the fixation. Overall, our data suggest that only highly skilled L2ers exhibit an L1-like asymmetric perceptual span.

[P1.12]

## **Developing the Individual Differences in Language Skills (IDLaS-DE) Test Battery—A new tool for German**

Sandra Bethke<sup>1</sup>, Antje S. Meyer<sup>1,2</sup> & Florian Hintz<sup>1,3</sup>

<sup>1</sup>Max Planck Institute for Psycholinguistics

<sup>2</sup>Radboud University

<sup>3</sup>Philipps University of Marburg

Individuals differ greatly in their ability to use language. While language users readily accept this fact, psycholinguistics has only recently begun to systematically examine this variability. To contribute to this growing field of research and to move beyond some of its limitations, our lab developed an extensive battery of behavioural tests measuring (1) linguistic processing skills, (2) linguistic knowledge, and (3) general-cognitive skills implicated in linguistic processing for younger adult speakers of Dutch. This battery has been normed in a large number of individuals and is available to the research community. To facilitate work on individual differences in other languages, we are currently developing a German version of the test battery. As its Dutch sibling, the German battery features tests falling into the broader categories (1)-(3). Here, we present the overall structure of the German battery version, the results from five pilot studies run in medium-sized samples of approximately 80 participants, and our plans for norming the new tool and using it to investigate individual differences in conversation.

[P1.13]

## **Morphological Priming in Overt Language Production: Electrophysiological Evidence from Mandarin Chinese**

Jiaqi Wang<sup>1</sup>, Rinus Verdonshot<sup>2</sup>, & Niels O. Schiller<sup>1</sup>

<sup>1</sup>Leiden University Center for linguistics, The Netherlands

<sup>2</sup>Max Planck Institute for Psycholinguistics, Nijmegen

In a long-lag priming experiment where there was a substantial delay between the prime and target, thirty-two native Mandarin Chinese speakers were asked to name pictures. The design involved morpheme-related compound words (e.g., 山羊 /shan1yang2/ "goat") and unrelated compound words (e.g., 玫瑰 /mei2gui1/ "rose") as primes, and monosyllabic words that shared a morpheme in either the first (e.g., 山/shan1/ "mountain") or second (e.g., 羊/yang2/ "sheep") position as targets. Behavioral data and electrophysiological data were collected. The behavioral results were surprising and went against earlier findings in Indo-European languages, showing that the target picture naming was not facilitated by morphologically related primes in both the first and second positions. This suggests that there is no morphological priming for individual constituents in the production of Mandarin Chinese disyllabic compound words. However, morpheme-related prime words elicited a reduced N400 compared with morpheme-unrelated prime words in the ERP analyses, suggesting the automatic activation of individual constituents in bare noun production.

[P1.14]

## **The Effects of the Study of Latin on Language Competence: a Study in Flemish Secondary Education**

Cathy Hauspie<sup>1</sup>, Wouter Duyck<sup>1,2</sup>, Mark Janse<sup>1</sup>, & Arnaud Szmalec<sup>1,3</sup>

<sup>1</sup>Ghent University

<sup>2</sup>NVAO

<sup>3</sup>Université catholique de Louvain

While Latin has not been used as a means for spoken or written communication for several centuries now, the language is still present to a considerable extent in the European educational field. To argue its value, classicists typically refer to empirical studies that have demonstrated that studying Latin leads to improved language abilities, which could be considered as near transfer. However, these studies generally lack a theoretical framework, demonstrate problematic methodologies, and make causal inferences based on correlational evidence. To address these empirical shortcomings, we are conducting a study on the effects of Latin education on Flemish students' language competence, while dissociating the effects from a priori pupil characteristics. A multitude of tests are administered, including (but not limited to) an IQ test, a vocabulary test, tests to assess meta-linguistic awareness and questionnaires on motivation. We will make a cross-sectional comparison between students in their first and last year of secondary school. We will present data from approximately 1200 participants, half of which are enrolled in Latin education, on a variety of (meta-)linguistic outcome variables.

[P1.15]

## **Visual Intuitions in Blind People: The Role of Direct Sensory Experience on Concreteness and Imageability Ratings**

Marco Petilli & Marco Marelli  
University of Milano-Bicocca

The strongest formulations of grounded cognition assume that perceptual intuitions about concepts necessarily require the re-activation of sensory experience we have made with their referents. Here we tested such an assumption by asking whether visual intuitions about concepts can still be accurately formed in the absence of direct visual experience. To this aim, we exploited Flickr Image, a photo-sharing platform, to extract a data-driven estimate of concepts' visual experienciability (i.e. the availability of their visual representation in the world) and then tested whether this estimate could predict concreteness and imageability intuitions in blind people. Our results demonstrated that even when direct experience is missing, the visual properties of word referents can still be predicted by their level of visual experienciability in the world. Thus, direct visual experience with objects does not seem to be critical in making them concrete and imageable in a person's intuitions. Instead, our findings support the notion that perceptual judgments are shaped by high-level conceptual knowledge, which may not necessarily be derived from direct perceptual experience.

[P1.16]

### **The role of animacy violation in novel metaphor comprehension**

Patrycja Kakuba & Karolina Rataj  
Adam Mickiewicz University Poznań, Poland

Although figurative language frequently embraces animacy violation (e.g., healthy attitude), event-related potential (ERP) research on the impact of animacy violation on metaphor comprehension is scarce. Research into the two domains shows that both animacy (e.g., Szewczyk and Schriefers 2011) and metaphor conventionality (e.g., Rataj et al. 2018) influence the ERP amplitudes, which reflects increased processing demands. The aim of the present study was to investigate the role of animacy violation in novel metaphor comprehension in Polish. To this aim, we tested novel metaphoric sentences in two conditions, with and without animacy violation. We predicted that the ERPs (in particular the late components) to novel metaphors would be modulated by animacy. Preliminary results will be discussed in reference to theories on metaphor comprehension.

Rataj, Karolina, Anna Przekoracka-Krawczyk and Rob H.J. van der Lubbe. 2018. "On understanding creative language: The late positive complex and novel metaphor comprehension", *Brain Research* 1678: 231–244.

Szewczyk, Jakub M. and Herbert Schriefers. 2011. "Is animacy special?", *Brain Research* 1368: 208–221.

[P1.17]

**Homophones revisited - What can production experiments tell us about the representation of homophones in the mental lexicon?**

Frauke Hellwig<sup>1</sup> & Peter Indefrey<sup>1,2</sup>

<sup>1</sup>Heinrich Heine University, Düsseldorf

<sup>2</sup>Max Planck Institute for Psycholinguistics, Nijmegen

In the last years, there has been quite some debate going on about the representation of homophones in the mental lexicon. Recent data are mainly based on spoken corpus analysis. Gahl (2008), e.g., examined spontaneous telephone conversations. She found, that high frequent heterographic homophones are pronounced faster than their low frequent twins and concluded that homophones do not share any representation on the lemma level. This is in contrast to findings of Jescheniak (2003) who showed that voice onset times of low frequent homophones are determined by the existence of their high frequent twins. In a series of well controlled production experiments on German heterographic and homographic homophones we show that the picture is a rather complex one: On the one hand, in isolation, only heterographic homophones show differences in pronunciation duration, whereas on the other hand, in sentence context homophones with different syntactic functions show the largest duration effect. Our findings best fit to a model where duration differences between homophones are attributed to a later stage in the word production process and not to separate representations without any common layer in the mental lexicon.

# **Poster Session 2**

## **(P2.1 – P2.16)**

Tuesday 30<sup>th</sup> 15.20



[P2.1]

**DYNAMIC INTERACTIONAL CONTEXTS WITHIN THE SAME PERSON: HOW HERITAGE BILINGUALS  
RECRUIT COGNITIVE RESOURCES TO SPEAK EACH LANGUAGE**

Jasmin Hernandez Santacruz  
University of California, Irvine

Bilinguals regulate the concurrent activation of their language systems by attending to social and linguistic cues, which prompt them to remain in a single language, to switch from one language to another, or to mix languages when codeswitching. Successful language switching requires access to cognitive resources. We report a study that examines this process in heritage speakers of Spanish in Southern California, a group of bilinguals that has received less attention in the literature. Unlike studies that examine this process by comparing different groups of bilinguals in distinct interactional contexts, heritage speakers are unique because the same speaker may be required to manage the demands of using their home/societal languages differently within the course of a day. Although most of the bilinguals in our sample are more dominant in English, the societal language, their lexical production in English draws on proactive cognitive control whereas production in Spanish relies more on reactive control. This in-progress study serves as an opportunity to establish a baseline for future studies to examine language switching in the presence of distinct cues for heritage speakers who live on both sides of the US-Mexico border.

[P2.2]

**Implications of incomplete orthogonal designs with fully-crossed random variables: a case study employing PWI**

Yufang Wang, Jurriaan Witteman, & Niels Schiller

Leiden University Centre for Linguistics (LUCL); Leiden Institute for Brain and Cognition (LIBC)

A 2-by-2 experimental design with fully-crossed random variables is widespread in language production research, e.g., studies employing picture-word interference (PWI). However, obtaining an entirely orthogonal table across random variables may not always be possible. However, whether such a partial experimental design is feasible has not been systematically studied.

Theoretically, the feasibility of an experimental design depends on the accuracy (i.e., whether the real coefficients fall into the 95% CI of the estimations) and the precision (the value of the standard error of the estimations) of the treatment effects (i.e., the effect of the manipulated variables) in the final statistical model the experimental design contributes to (Al-Banna et al., (1990); Goos, P., & Jones, B. (2011); Wolkenhauer et al., (2008); Al-Banna et al., (1990)). On this basis, a simulation was done to examine whether partially filling out orthogonal tables hampers the feasibility of the experimental design.

According to the simulation results, partially filling out the orthogonal table across random variables does not hamper the accuracy of the experimental design but may affect its precision, which could be fixed by more overall observations.

[P2.3]

**Conceptual preferences of the dominant language prevail: Evidence from color concepts and gerund use in Spanish-German Bilinguals**

Renate Delucchi Danhier, Katrin Odermann, & Barbara Mertins  
TU Dortmund

Bilingual children acquire the grammar and the lexic of both their languages simultaneously. The languages may differ in their grammatical structures and semantic concepts. E.g., while German only has one concept for the color blue (blau), Spanish distinguish between a darker (azul) and a lighter (celeste) shade. Besides, Spanish is an aspect language while German is not. According to the linguistic relativity hypothesis, these differences influence the cognition of speakers. Using a language production task in Spanish, we look at language specific color concepts and the use of gerund (continuous aspect) of Spanish-German bilingual children (N = 40), to assess which system they prefer in grammar and lexic. A baseline for each language is established with a smaller sample of age matched monolinguals (N = 20). Using a questionnaire, we establish the dominant language for each bilingual child using information like country of residence, travels and language of interlocutors that regularly speak with the child. Results show that bilinguals are a heterogenous group and that the lexical and grammatical concepts of the dominant language are preferred at least while still in the process of language acquisition.

[P2.4]

### **Exploring the boundaries of statistical learning. Word segmentation in a natural language**

Marie-Christin Flohr<sup>1</sup>, Katie von Holzen<sup>2</sup>, & Sarah Schimke<sup>1</sup>

<sup>1</sup>Ludwig-Maximilians-Universität München

<sup>2</sup>Technische Universität Braunschweig

The current study explores statistical learning (SL) in L2 learners' word segmentation at first exposure. While we know that SL is an important mechanism in L1 acquisition, less is known about SL in L2 acquisition. Moreover, most studies rely on artificial input, which limits ecological validity.

In the current study, thirty Spanish adults listen to German input in a familiarization phase (FP). In a subsequent forced choice task, they hear bisyllabic target words and indicate whether they heard the respective word in the FP (yes-indication) or not. Critical words (CW) appeared in the FP, absent words (AW) were not presented in the FP and part words (PW) consisted of syllables that were present in FP, while the word itself was not presented during the FP.

A preliminary GLMM with 9 participants revealed a significant influence of target condition (CW, PW, or AW). CW elicited more yes-indications than AW ( $z = 6.514$ ,  $p < .0001$ ) and PW ( $z = 4.033$ ,  $p = .0002$ ). We furthermore calculated medium response sensitivity ( $d'$ prime) for CW vs. AW ( $d' = 1.5704$ ) and CW vs. PW ( $d' = 0.6324$ ).

These results suggest that learners rely on SL to segment words of a natural language. We will discuss theoretical implications and directions for future research.

[P2.5]

## **Allowing People to Be Logical: The Role of Response Options in Reasoning with Conditional and Incompatibility Statements**

Bojan Nys<sup>1</sup>, Janie Brisson<sup>2</sup>, & Walter Schaeken<sup>1</sup>

<sup>1</sup>KU Leuven

<sup>2</sup>Université du Québec à Montréal (UQÀM)

Traditional reasoning paradigms rely heavily on classical propositional logic to assess verbal inferences. Studies using this framework often conclude that people tend to endorse invalid inferences, however, the case might not be so clear-cut. In the current study, we compare the traditional paradigm to one based on modal logic. We hypothesize that the latter allows people to be more nuanced in their responses, and can provide a glimpse of the underlying pragmatic processes at play. We tested how the available response options impact performance on a reasoning task. Experiment 1 focusses on conditional premises (e.g., “If a rail is misplaced, then the train will derail”), which have been studied extensively before. Experiment 2 investigates incompatibility statements (e.g., “A misplaced rail is incompatible with the train staying on track”), which remain empirically understudied, despite being fundamental within our communication and understanding of the world. Our findings show that response options using the modals ‘might’ and ‘must’ significantly increase performance on incompatibility inferences, but seemingly do not impact conditional reasoning. A pair of follow-up experiments is currently being set up.

[P2.6]

**In dyslexic children, the addition of proprioceptive treatment improves reading ability.  
Randomised pilot study.**

Luc Virlet, Laurent Sparrow, & Cédric Bonnet  
Univ. Lille, CNRS, UMR 9193 - SCALab - Sciences Cognitives et Sciences Affectives

The INSERM report on proprioceptive therapy for dyslexia was able to confirm its safety but could not conclude on its effectiveness (Gueguen 2016). Proprioceptive treatment (Quercia, 2007) aims to correct multisensory integration disorders including audio-visual. Does adding proprioceptive therapy to speech therapy improve the reading skills of dyslexic children?

**Methodology:**

Three groups participated: dyslexic children with a speech therapy (n=9); dyslexic children with speech and proprioceptive therapies (n=10); normo-reader children (n=9). We evaluated silent reading (Eyetracker: Gaze duration, word frequency effect, initial saccade size (Reichle 2003)) and oral reading (C index of Alouette-R test), in an initial session and after nine months of therapy. Registered on clinicaltrials: NCT03448237.

**Results:**

When the proprioceptive therapy was added:

- Saccade size, lexical access, and word frequency effects no longer differed from control group.
- The C-index showed a gain of +2.09 SD, (d=0.99).

**Discussion:**

We validated our hypothesis that the addition of proprioceptive treatment improves the reading ability of dyslexic children.

What is the role of audiovisual integration disorders of proprioceptive dysfunction in dyslexia?

[P2.7]

### **Priming and the L2 Acquisition of motion event constructions**

Anna Michelotti, Ioli Baroncini, & Helen Engemann  
University of Mannheim

The way in which motion events (ME) are expressed varies considerably across languages and has been shown to be a domain in which L2 learners have difficulties adapting to the target language norms.

According to Talmy's typology (Talmy, 1983), languages fall into one of two categories: Satellite-framed (SF) languages encode path of motion in the verbal periphery, whereas verb-framed (VF) languages encode it in the verb stem. The choice of one or the other construction also affects which spatial information is foregrounded. Therefore, acquiring the target-like ability to talk about motion in a foreign language may also imply learning a new way to conceptualize space.

In this study, we investigate whether production priming can be used as a tool to generate implicit learning of L2 ME in typologically different languages (Italian (VF) – German (SF)).

We will present preliminary results of the pilot phase of this study, which investigated the unprimed preferences of ME encoding and interpretation in L1 Italian speakers.

Talmy, L. (1983). How Language Structures Space. In H. L. Pick & L. P. Acredolo (Eds.), *Spatial Orientation: Theory, Research, and Application* (pp. 225–282). Springer US.

[P2.8]

### **Name-dependent semantic associations for existing concepts**

Aliona Petrenco & Fritz Günther  
Humboldt Universität zu Berlin

In this study we attempt to challenge the assumption of linguistic arbitrariness by looking at the ways a label assigned to a concept and the context words it is presented with alter how this concept is perceived. In a free association task, participants read texts about existing concepts, i.e., political events (e.g., Brexit) referred to using different labels (e.g., exit, emancipation, or desertion) and presented with different context words (e.g., difficulty, challenge, or impediment), and generate 5 associations. We examine whether (a) a label assigned to a concept modulates its semantic associations (label effects), (b) the valence of this label modulates the valence of the associations (valence effects), (c) the context modulates semantic associations and their valence (context effects). To test our hypotheses, we will use distributional semantics (specifically, fastText) to represent words as vectors and measure similarity between them as cosine similarity between the modelled vectors. We use valence norms to compare the valence of the associations with the valence of the labels and the context words. We are planning to run the pilot online in March 2023 and present the data at PiF.



[P2.9]

### **Linguistic Relativity: The Case of Farsi and German**

Maryam Fatemi & Barbara Mertins

TU Dortmund, Fakultät Kulturwissenschaft Institut für Diversitätsstudien Kognition ∩ Literatur ∩  
Medien ∩ Sprache

The study is necessitated by the lack of research on Farsi, an Iranian language, in the framework of linguistic relativity. The purpose is to explain my PhD project in which I compare the influence of grammatical gender on the conceptualisation of Farsi-German bilinguals and German monolinguals using object description and Implicit Association Test. The results are expected to suggest that Farsi bilinguals are influenced by the grammatical gender of German, while conceptualising the objects. The results of the study may have implications for the language acquisition context.

Boroditsky, L., Schmidt, L. A., & Phillips, W. (2003a). Sex, syntax, and semantics. *Language in Mind: Advances in the Study of Language and Thought* (22), 61–79.

Corbett, G. (1991). *Gender: Textbooks in Linguistics*. Cambridge

Samuel, S., Cole, G., & Eacott, M. J. (2019). Grammatical gender and linguistic relativity: A systematic review. *Psychonomic Bulletin & Review*, 26(6), 1767–1786. Retrieved from <https://doi.org/10.3758/s13423-019-01652-3>

Whorf, B. (1956). *Language thought and reality*. MIT Press.

[P2.10]

## **The Role of Cognitive and Social Factors in Processing Non-Binary Spanish Pronouns**

Alexandra Roman Irizarry, Judith Kroll, & Julio Torres  
University of California, Irvine

Spanish is a language that marks gender as masculine or feminine. More recently, to refer to non-binary individuals in Spanish, speakers have proposed the morphemes  $-x$  and  $-e$  to indicate neutral gender. This study adopted a psycholinguistic approach to examine how cognitive and social factors can affect the linguistic processing of  $-x$  and  $-e$ . Participants were Spanish-English bilinguals who completed two self-paced reading tasks in Spanish, one that examined reading times on non-binary pronouns and another that assessed grammatical gender violations. They also completed an executive function task, the AX-CPT, a measure of working memory, and the Gender Sex Diversity Scale. We found that pronouns with non-binary morphemes elicited longer reading times, but that the effect declined as Spanish proficiency increased. We found no relationship between gender diversity beliefs and reading times on pronouns with non-binary morphemes. Higher working memory and higher proactivity on the AX-CPT were associated with shorter reading times across all conditions. The results suggest that the processing of non-binary morphemes may depend more on cognitive constraints than on bilinguals' social beliefs of gender and sexuality.

[P2.11]

## **Uncertainty in Language Prediction: Investigating L2 Speakers' Predictive Processing Skills**

Aybora Koc, Leigh Fernandez, & Shanley Allen

RHEINLAND-PFÄLZISCHE TECHNISCHE UNIVERSITÄT KAISERSLAUTERN-LANDAU

Several studies have shown that both native speakers and second language (L2) speakers predict upcoming information based on semantically constraining aspects of the sentence during reading and listening (Altmann & Mirkovic, 2009; Martin et al., 2013; Liu et al., 2022). However, it remains unclear how L2 speakers recover when they make a prediction, but it is not met. In this VWP study, we test both predictable and unpredictable items, as well as how L2ers' recover when a sentence appears to be predictable (e.g., 'The tailor trims the...'), but the target word is anomalous (e.g., 'tree'). Additionally, we explore the role of English proficiency on prediction skills. Our results suggested that L2 speakers exhibited robust predictive processing, as evidenced by earlier and longer fixations on predictable items compared to unpredictable. In terms of the anomalous items, L2 speakers were also able to shift their attention quickly and efficiently from their original prediction to the anomalous target. Interestingly, we found no influence of proficiency on prediction.

[P2.12]

### **Does the cognate facilitation effect stem from shared orthographic representation?**

Michiel Kuse, Evy Woumans, & Wouter Duyck  
Ghent University

Cognates – words which share meaning and (most of) their spelling across languages – are generally processed faster than control words, an effect known as cognate facilitation. In the present study, we looked into the possibility of shared orthographic representation of cognates as an explanation for this effect. Participants completed a lexical decision task nine times over three days in either their first or second language, and were tested in the other. Target words were identical and non-identical cognates as well as non-cognate translation equivalents. Results showed a clear training effect for all word types, even though the language of testing and training was different. However, identical and non-identical cognates were processed much faster post-training than translation equivalents and controls, with the effect size for identical cognates almost twice as large as for non-identical ones. The absence of such an effect for translation equivalents, and the distinction between identical and non-identical cognates, urge us to look beyond shared semantic representation and co-activation of orthographic neighbours alone. Our findings therefore provide evidence for the shared orthographic representation of identical cognates.

[P2.13]

### **Novel metaphor processing in a second language: A behavioral and ERP study**

Adriana Miller & Janet van Hell  
Pennsylvania State University

To examine mechanisms underlying creative language processing, behavioral and ERP studies have compared responses to novel metaphorical (The water hugged the swimmer), semantically anomalous (The water canceled the swimmer) and literal (The water soaked the swimmer) sentences. In monolinguals, graded amplitudes of the N400 (an index of lexical-semantic access [1]) have been found, indicating greater processing difficulty for anomalous than for metaphorical than for literal sentences [2]. For bilinguals, processing novel metaphors in a second language (L2) may be more effortful due to weaker links between L2 concepts or more efficient due to experience with conceptual representations in two languages. Using behavioral and ERP methods, the present study investigated L2 novel metaphor processing of 35 Mandarin-English bilinguals. Like L1 users [2], L2 users rated anomalous sentences as most unusual and literal sentences as most appropriate, and N400 amplitudes were larger for anomalous than for literal sentences. Contrary to L1 users [2], no sensitivity to novel metaphors was seen. Data will be discussed in light of bilingual L2 conceptual networks.

[1] Federmeier, 2021, *Psychophysiology*

[2] Jonczyk et al., 2020, *Psychophysiology*

[P2.14]

## **AN ONLINE STUDY ON LEXICAL COMPETITION IN BILINGUALS BY MEANS OF THE FLANKERS PARADIGM**

Junior VARGAS & Severine CASALIS  
SCALAB, Université de Lille

Understanding how lexical entries are activated in bilinguals' minds would help to understand how language is processed by humans. It could also shed a light on the process of vocabulary learning. In this study, we investigated whether semantic information is activated automatically in the lexicon of bilingual people when subliminally presented with words in their L2. Recently, Declerck et al. (2018) found that language membership plays a role when recognizing words either in L1 or in L2. This is explained by the fact that L1 and L2 are grouped in the same node, as accounted by the BIA and the BIA+ model; however, in the latter we find a dissociation between lexical nodes and semantic nodes. We carried out an online study making use of the Flankers paradigm (a target with a distractor on each side). We presented a list of 80 targets, including 40 L1 words and 40 pseudowords. Targets were matched with either a L1 or L2 semantically related or non-related word. Participants performed a lexical decision task where they had had to press a key if they recognize the word presented in the middle. Semantics seems to be activated simultaneously with language membership. These results are in line with the model BIA.

[P2.15]

### **Analysis and modeling of the denial of expectation contrast as a functional relation**

Marie Christin Walch

Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS), Berlin; Humboldt-Universität zu Berlin

Various contrast markers such as the German discourse connectives 'aber' (but) or 'obwohl' (although) connect two sentences that contradict each other. In particular, they can trigger a so-called expectation denial, the strongest contrast type according to Hobbs (1985). This occurs when the expectancy value of the background assumption, based on expertise, personal experience, or social norms of behavior, is not met or even rejected.

I propose to view contrast as a weighted homogeneous relationship between two characteristics that is predictable using mathematical modeling. To support this claim, I use numerical data from a corpus of car and motorcycle reviews to construct an interval of expected values. If a feature value lies outside the interval, it can be used as a contrastive constituent and paired with a content-matching partner, taking into account several conditions arising from the corpus analysis.

Hobbs, J. R. (1985). 'On the coherence and structure of discourse', Technical Report 85- 37, Center for the Study of Language and Information, Stanford, CA.

Hesse, C. et. al.(2020). 'Annotating QUDs for generating pragmatically rich texts'. In Proceedings of the Workshop on Discourse Theories for Text Planning, Dublin, Ireland.

[P2.16]

## **The Effect of Language Immersion in an Emotional Face-Word Stroop Task: A Behavioral and EEG study**

Nicole A. Vargas Fuentes, Judith F. Kroll, & Julio Torres  
University of California, Irvine

This in-progress study aims to understand how language experience affects emotional processing in bilingual minds and brains. Mandarin-English bilinguals in the US, strongly dominant in Mandarin but immersed in English, completed a face-word Stroop task while EEG was recorded. They classified faces as happy or fearful while ignoring a congruent or incongruent emotion word. Participants completed blocks in both languages. Language experience was assessed by the BLP(1) which provides a language dominance score. We expect to replicate findings from past studies(2) wherein there is a main effect of congruency and an interaction between language and congruency in behavior and brain activity measures. However, the critical question is whether the typical emotionality of the first language will be observed for immersed bilinguals whose dominance has shifted.

1. Birdsong, D, Gertken, LM, & Amengual, M (2012). Bilingual Language Profile: An Easy-to-Use Instrument to Assess Bilingualism. COERLL, University of Texas at Austin.

2. Fan, L, Xu, Q, Wang, X, Xu, F, Yang, Y, & Lu, Z (2018). The automatic activation of emotion words measured using the emotional face-word Stroop task in late Chinese–English bilinguals. *Cognition and Emotion*



# **Poster Session 3**

**(P3.1 – P3.19)**

Wednesday 31<sup>st</sup> 14.50

[P3.1]

**A systematic review on switching and inhibition in bilingual children. Examining critical and post-critical age groups for cognitive development**

Niels Planckaert<sup>1</sup>, Wouter Duyck<sup>2</sup>, Evy Woumans<sup>1</sup>

<sup>1</sup>Ghent University, Department of Translation, Interpreting and Communication

<sup>2</sup>Ghent University, Department of Experimental Psychology

Several studies have pointed to beneficial effects of bilingualism on executive functioning in children. However, these effects have proven difficult to reproduce (e.g. Dick et al., 2019), and findings in the field have been contested altogether (e.g. Paap et al., 2015). We have conducted a systematic review on research into bilingual advantages for inhibition and switching in children up to the age of 12, differentiating between critical and post-critical age groups. 58 references were considered. Particular attention was paid to the experimental tasks applied. Our review sheds light on frequently used tasks for measuring switching and inhibition in addition to drawing links between sensitive periods for cognitive development and bilingual advantages being detected.

Dick, A. S., Garcia, N. L., Pruden, S. M., Thompson, W. K., Hawes, S. W., Sutherland, M. T., Riedel, M. C., Laird, A. R., & Gonzalez, R. (2019). No evidence for a bilingual executive function advantage in the ABCD study. *Nature human behaviour*, 3(7), 692-701.

Paap, K. R., Johnson, H. A., & Sawi, O. (2015). Bilingual advantages in executive functioning either do not exist or are restricted to very specific and undetermined circumstances. *Cortex*, 69, 265-278.

[P3.2]

### **The role of prediction error in the L2 processing of the dative alternation**

Duygu Şafak & Holger Hopp  
Technische Universität Braunschweig

This study tests whether L2 learners recruit error-driven prediction mechanisms for learning in a priming experiment using visual world eye-tracking. Specifically, we explore how L2 learners adapt structural predictions when ditransitive verbs biased to either the double-object (DO) or the prepositional-object (PO) structure occur in the other structure.

Adult L1-German–L2-English learners ( $n = 48$ ) first read aloud prime sentences crossing Verb Bias (DO-bias/PO-bias) and Structure Type (DO/PO). Subsequently, they listened to target sentences while viewing visual scenes with corresponding referents.

The results revealed PO-priming effects: L2 learners generated more expectations for the PO structure when they heard the target verb after PO (vs. DO) primes. L2 learners also showed surprisal effects of verb bias, in that PO-priming was larger when the prime structure mismatched prime verb bias, i.e., PO primes with DO-bias verbs. However, there were no priming effects for DOs.

The overall pattern of results suggests an error-driven prediction mechanism in L2 priming, similar to that in L1 priming (Chen, Wang, & Hartsuiker, 2022).

[P3.3]

### **The mediating role of reading on contextual diversity effects in foreign language learning: an eye-tracking study**

Candice Frances<sup>1</sup> & Jon Andoni Duñabeitia<sup>2,3</sup>

<sup>1</sup>Max Planck Institute for Psycholinguistics

<sup>2</sup>Centro de Investigación Nebrija en Cognición (CINC), Universidad Nebrija

<sup>3</sup>AcqVA Aurora Center, The Arctic University of Norway

Recent studies emphasize the importance of contextual diversity on learning. In the current eye-tracking experiment, participants read 30 short stories (in Spanish—their native language—or English—their foreign language) while their ocular movements were tracked. Novel pseudowords were embedded into the stories. Each participant saw them eight times but in different numbers of texts (8, 4, 2, or 1, from high to low contextual diversity). After reading, participants did a recall task (type in the pseudoword) and a recognition task (select the correct pseudoword). Diversity affected most reading time measures (first fixation, first pass, total reading time, regressions in, interacting with language in second pass duration). Language mainly affected how long participants took to read the story. In the offline behavioral results, participants showed better recognition with greater diversity (both response time and accuracy). Finally, second pass and total reading time over the pseudoword affected recognition response times and the latter also affected recall accuracy. Our results suggest that while the effects of diversity cannot be fully explained using reading time measures, these mediate its effects to some extent.

[P3.4]

### **Different mechanism of attention allocation are active during sentence processing: Evidence from pupillometry**

Tamás Káldi

Hungarian Research Institute for Linguistics

We investigated patterns of attention allocation during sentence processing. Attention is seen as a complex cognitive mechanism that selects information for further processing. It comprises a bottom-up component that automatically selects prominent information, and a top-down component that works in a voluntary manner based on information already represented in Working Memory.

We hypothesized that different linguistic structures trigger different components of attention: when a sentence with a prominent part (i.e. a linguistically focused element) is being processed, automatic attention allocation is triggered. However, when a syntactically complex structure is processed, mechanisms of voluntary attention need to work more intensely so that the representation of the sentence can be computed.

We conducted a two-session experiment in which participants heard sentences and had to respond to occasional verification questions after a short retention interval. In the first session we manipulated the presence of focus, while in the second session we manipulated syntactic complexity.

Pupil size measurement during the sentence presentation and the interval supported our hypothesis: in the case of focus, increased pupil dilation was observe

[P3.5]

### **Individual differences in the production of speech disfluencies**

Franziska Schulz<sup>1</sup>, Ruth Corps<sup>1</sup>, & Antje Meyer<sup>1,2</sup>

<sup>1</sup>Max Planck Institute for Psycholinguistics

<sup>2</sup>Radboud University

Spontaneous speech often contains disfluencies like repetitions, silent or filled pauses. Previous research has largely focused on the language-based factors (e.g. planning difficulties) underlying the production of these disfluencies. But research has also shown that some speakers are more disfluent than others. What cognitive mechanisms underlie this difference? We reanalyzed a behavioural dataset of 112 participants, who were assessed on a battery of tasks testing linguistic knowledge, processing speed, non-verbal IQ, working memory (WM), and basic production skills (Hintz et al., 2020, Scientific Data). Using the data from a spontaneous speech task, we determined how often participants produced different types of disfluencies. We then used a combination of network and factor analyses to investigate the relationship between these disfluencies and individual differences in particular cognitive skills. When analysing the first session of the task, we found a negative relationship between specific disfluency types, WM, processing speed, and word production. Further analyses will focus on the second session, investigating the stability of these relationships. We discuss our findings in relation to theories of language production.

[P3.6]

**Understanding the underlying mechanisms of cross-linguistic influence: Evidence from priming null and overt subject pronouns across languages**

Ioli Baroncini<sup>1</sup>, Anna Michelotti<sup>1</sup>, Helen Engemann<sup>1</sup>, Jacopo Torregrossa<sup>2</sup>

<sup>1</sup>University of Mannheim

<sup>2</sup>Goethe University Frankfurt

In this study we investigate the production of null vs. overt subject pronoun (OSPs) by German-Italian bilinguals using cross-linguistic structural priming (German-to-Italian and Italian-to-German). The division of labour of null vs. OSPs in the two languages (Italian is a null subject language and German a non-null subject language) allows us to test whether: (i) it is possible to prime null and OSPs across languages; (ii) there are differences in the priming effects between dispreferred vs. ungrammatical structures (in Italian the use of OSP, referring to the subject antecedent is dispreferred, while a sentence with a null subject in German, without coordination, is ungrammatical); and (iii) in which direction cross-linguistic influence can occur (from German to Italian, leading to the overproduction of the overlapping structure, namely the OSPs in Italian; or from Italian to German, leading to the production of a non-overlapping structure, the null subject in German). A pre-test without primes in both languages will indicate participants' preferences in using null vs. OSPs. Additionally, a post-test will reveal if these preferences change after conducting the priming experiments.

[P3.7]

**Discourse production strategies in majority and heritage speakers: a corpus analysis of openings and closings in Turkish and English**

Mert J Can<sup>1</sup>, Kalliopi Katsika<sup>1</sup>, Kateryna Iefremenko<sup>2</sup>, Simge Türe<sup>2</sup>, Oğuzhan Kuyrukcu<sup>2</sup>, Shanley E.M. Allen<sup>1</sup>, & Christoph Schroeder<sup>2</sup>

<sup>1</sup>RPTU Kaiserslautern-Landau

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Discourse openings and closings are defined as the linguistic material that precedes or follows the core phase of the discourse (e.g. Schegloff & Sacks 1973). Their typical functions include defining textual boundaries, introducing or closing off a new topic, orienting the addressee to what is coming next, presenting the stance of the speaker, and evaluating the material (Berman & Katzenberger 2004, Tolchinsky et al. 2002). The construction of discourse borders through openings and closings has been shown to be an area of dynamic difference across languages (e.g., Luke & Pavlidou 2002), but has rarely been studied in language contact situations (cf. Dollnick & Pfaff 2013). We aim to fill this gap in the literature by investigating discourse openings and closings in Turkish heritage speakers residing in the US examining both their heritage Turkish and majority English. Our corpus analysis is based on the RUEG corpus. In total, we analyzed the oral productions of 66 monolingual Turkish speakers, 55 heritage speakers of Turkish in the US, and 64 monolingual US English speakers. Our statistical analyses showed differences among speaker groups in the distribution of discourse functions depending on register, age and language setting.



[P3.8]

### **Word Meaning Inference in 6th Grade: The Role of Morphological Analysis and Morphological Generalization in Vocabulary Acquisition**

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Understanding unfamiliar words is a major issue for text comprehension. In this study, we investigated two meaning inference strategies used in 6th graders: contextual analysis (leading to word meaning inference from extra-word cues) and morphological analysis (leading to word meaning inference from intra-word cues). We then examined the possible transfer of morphological analysis to new word meanings, a process named morphological generalization.

We asked 166 6th graders to define 36 morphologically simple and complex low-frequency words presented in isolation (morphological analysis) and then in a short text (contextual analysis). Finally, they had to define a new set of morphologically complex words derived from the previous ones (morphological generalization).

The results show that 6th graders benefit from morphological and contextual analysis to infer the meaning of new words. However, both strategies are used independently from each other and are not jointly used to boost meaning inference. In addition, 6th graders find it difficult to generalize the meaning of a root to morphologically related words (morphological generalization). We will discuss these results and their implication for 6th graders vocabulary acquisition.

[P3.9]

**Is grammar a unique predictor of reading comprehension (RC) in children learning English as an Additional Language (EAL) and their monolingual peers?**

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Grammar is a prerequisite of RC, but may be challenging for children with EAL. At the same time, there is a paucity of research investigating the predictive role of grammar in RC in multilingual educational contexts. This study will fill the gap and test the relationship between grammar and RC, using Structural Equation Modelling of longitudinal data from 61 children with EAL and 529 monolinguals in Year 1 (age 5-6).

Children with EAL are predicted to underperform on precursor skills (receptive and expressive vocabulary, receptive and expressive grammar, word and non-word reading) as well as on Year 3 RC of English texts relative to monolingual peers. Latent Year 1 grammar will have a unique predictive value for RC in Year 3 after controlling for latent Year 1 vocabulary and latent Year 1 and 3 word and non-word reading in children with EAL but not in their monolingual peers. Factor structure is predicted to be the same in both groups but the relationship between grammar and RC might be stronger in the EAL than monolingual group.

The findings will show the importance of grammar in predicting RC in each group. They could also serve as a useful resource for educators working with linguistically-diverse children acquiring RC skills.

[P3.10]

### **A computational model of the pragmatics of spatial language interpretation**

Midas Vanooteghem & Walter Schaeken  
KULeuven

How people interpret utterances about the location of objects seems to depend on two elements of the context. First, interpretation by a listener depends on whether the purpose of the speaker is to indicate or to verify. Previous research shows that when interpreting an indicative sentence, 'to the left' is interpreted to mean 'close and horizontally to the left.' On the other hand, in a verificative question 'to the left' is interpreted to mean 'somewhere in the field to the left.' When participants are asked to give a rating of applicability, they take angle into account but not distance. Additionally, interpretation also depends on the presence of other objects in the scene.

Recent advances in formal pragmatics have led to the proposal of the Bayesian Rational Speech Act (RSA) framework, which explains how people reason about each other's reasoning about the interpretation of utterances. The RSA framework has previously never been applied to spatial language to explain the findings above. In our research, we constructed a computational RSA model that tries to explain the findings of the spatial reasoning literature. A preliminary experiment confirms our hypotheses except for those concerning distance effects in verification.

[P3.11]

**Pass me the mole report! Investigating the role of linguistic distributional and sensorimotor information in novel conceptual combination**

Dounia Lakhzoum, Dermot Lynott, & Louise Connell  
Maynooth University

Previous research has shown that the human conceptual system relies on both linguistic and sensorimotor information to process language. We used two conceptual combination tasks, where people are presented with novel word combinations (e.g., cactus-beetle, an elephant-complaint, or a mole-report), with either shallow (sensitivity judgement) or deep (interpretation generation) processing requirements. We consider the role of linguistic proximity (measured as distributional and word frequency) and sensorimotor similarity between concepts (measured using sensorimotor profiles) on the comprehension of novel conceptual combinations. We expected that both linguistic and sensorimotor variables would predict people's processing, but the extent would depend on whether they were simply judging how sensible they are or having to provide a full interpretation. Results suggest differential roles for linguistic and sensorimotor information in conceptual processing.

[P3.12]

### **Exploring cross-linguistic influence in bilinguals' ungrammatical structures: Evidence from a rating study**

Foteini Karkaletsou, Alina Kholodova, & Shanley Allen  
RPTU Kaiserslautern-Landau

This study investigates how Canadian English-French bilingual adults rate ungrammatical structures in French that are grammatical in English. Via a timed acceptability judgment task in Gorilla, we aim to test whether cross-linguistic influence (CLI) from English leads to higher acceptability ratings for these ungrammatical structures, and whether the degree of acceptability depends on structure type. We test four types of constructions: 1) ditransitives, 2) transitives with à-marking on the object, 3) reciprocals and 4) object clitics. All sentences are presented in a grammatical and an ungrammatical condition in a randomized order, and participants are asked to rate them on a scale from 1 (completely unacceptable) to 5 (completely acceptable). Pilot data from 12 participants reveal that ungrammatical sentences for 1), 2) and 3) yield a mean rating of over 3 (threshold for acceptability). However, this is not the case for 4), where the mean rating for ungrammatical items approaches 2. This provides some first evidence that acceptability of ungrammatical structures induced by CLI appears to depend on structure type. Data collection is ongoing via Prolific and will be complete by the time of the conference.

[P3.13]

### **Written language acquisition in French-Arabic bilingual children: Impact of metalinguistic competences and vocabulary**

Zalfa Chamoun<sup>1</sup>, Pr Severine Casalis<sup>1</sup>, & Dr Pauline Quemart<sup>2</sup>

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In the present study, we examine how the metalinguistic competences (phonological and morphological abilities) and the vocabulary level predict reading acquisition and reading comprehension (Casalis & Louis-Alexandre, 2000 ; Schiff & Saiegh Haddad, 2018) in Lebanon, a country characterised by diglossia (spoken Arabic at home and Modern Standard Arabic at school) and multilingualism (learning at school in MSA and French/English).

The participants are students in Grade 4 and grade 5 from different linguistic contexts (familial and educational). We evaluated the predictors in addition to their reading level and reading comprehension skills in MSA and French. The results are being analyzed. They will help clarify how the linguistic context and the language characteristics module the predictors of written language acquisition.

1. Casalis, S. & Louis-Alexandre, M. F. (2000). Morphological analysis, phonological analysis and learning to read French: A longitudinal study. *Reading and Writing: An Interdisciplinary Journal*, 12, 303–335.

2. Schiff, R. & Saiegh-Haddad, E. (2018). Development and relationships between phonological awareness, morphological awareness and word reading in Spoken and Standard Arabic. *Frontiers in Psychology*. 9.

[P3.14]

### **Effects of conceptual processing and social context on semantic interference**

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Picture-word interference (PWI) studies show that speakers are slower to name pictures with semantically related compared to unrelated distractors. A recent study by Kuhlen and Abdel Rahman (2022, *Cognition*) suggests lexical interference disappears, and even turns into facilitation, in a joint task that enhances conceptual processing. In three experiments, we used a PWI task to disentangle effects of conceptual processing and social context. In E1, participants (N=20) named pictures and ignored related (N=70) or unrelated (N=70) written distractors. In E2 (N=22), PWI trials were mixed with association trials (N=280), which encouraged conceptual processing. E3 involved pairs of participants. Speaker A (N=28) did the same task as participants in E2, now with an addressee B who typed an association to A's response, thus giving A's utterance a communicative function. The interference effect found in E1 ( $d=42\text{ms}$ ,  $p < .001$ ) was reduced in E2 ( $d=23\text{ms}$ ,  $p > .05$ ) and E3 ( $d=9\text{ms}$ ,  $p > .05$ ). However, there was no interaction between the interference effect and the two social conditions (E2 vs. E3). These findings suggest that conceptual processing (not social context) reduces semantic interference.

[P3.15]

**Local versus global reasons for a speaker to be disfluent: Feeling of another's knowing for native and non-native speakers**

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How speech is delivered impacts listeners' perception of their confidence in their knowledge (feeling of another's knowing, FOAK, Brennan & Williams, 1995). Here, we are interested in whether non-native speakers, who are generally perceived as less fluent (Pinget et al., 2014), would also be evaluated as less knowledgeable when disfluent, or if instead, comprehenders would be more lenient (Fairchild et al., 2020).

In contrast to previous studies where FOAK was measured by explicitly asking participants, we propose a novel paradigm: The horse-racing task. In this task, participants hear descriptions of racing horses and are asked to place bets as an indirect measure of their evaluation of the speaker's confidence in their knowledge. If FOAK indexed by disfluency can be modulated by the speaker's nativeness, then disfluent descriptions produced by a native speaker should lead to lower perceived FOAK (i.e., participants should bet less money on such horses), while participants might be more lenient for its non-native counterparts. We will additionally measure language attitudes and processing fluency to control for the potential mediating effects of these variables on participants' betting behaviour (c.f. Dragojevic et al., 2017).



[P3.16]

### **Contested concepts in dialogue: an exploratory study**

Greta Gandolfi, Holly Branigan, & Martin Pickering  
University of Edinburgh

Dialogue helps people aligning on contested concepts, such as “politics”, i.e., concepts for which there is not a correct or standard use (Gallie, 1956). Here we investigate what is about dialogue that supports alignment on such concepts, compared to non-contested ones, e.g., “music”. 80 English speakers ranked 15 survival items twice, before and after discussing them with a partner. In the contested-concepts group, participants were told that there was an objective, but unknown, correct order of the items, set by a recognised epistemic authority. In the non-contested-concepts group, speakers were instead told that there was no right or wrong order.

Within dyad lists become more correlated after the discussion, regardless of the group. This suggests that dialogue equally supports alignment with respect to contested and non-contested concepts. Interestingly, however, speakers in the contested group have shorter conversations, with fewer pauses. We hypothesise speakers, when representing non-contested concepts, need to appeal to a relevant external standard, which might require more negotiation and effort. We plan to further analyse our dialogue data by focussing on collaborative effort (as in Rasenberg et al., 2022).

[P3.17]

### **Individual differences in consolidation of auditory statistical learning**

Christophe Vanhouwe & Louisa Bogaerts  
Ghent University

Statistical learning (SL) is the ability to detect statistical regularities in the environment. Nearly all work on SL has focused on the ability to detect regularities, whereas the ability to retain knowledge about statistical regularities is less studied, and individual differences therein have to date not received any attention. We tested a large sample ( $n = 80$ ) on an auditory SL paradigm with embedded syllable patterns, assessing participants' pattern knowledge immediately after learning and then again after one week, without any additional exposure to the patterns. The assessment consisted of an implicit, processing-based measure as well as an alternative forced-choice test (AFC). Results show that performance (at group level) improves over the period of one week, both on the implicit measure ( $t(79) = 2.23, p = 0.028; d = 0.25$ ), and the AFC test ( $t(79) = 6.36, p < .001; d = 0.71$ ); indicating that learning is not instant and occurs over time. In addition, we are now quantifying the stability of the retention measure at the individual level with a test-retest design, by running the same study with the same participants one month later. This will elucidate whether retention can be measured reliably and is stable over time.

[P3.18]

### **Children's Perspective-Taking in the Three-party Conversation**

Hui Chen & Xiaobei Zheng  
Shenzhen University

Previous studies showed that 5- to 6-year-old children can take the other's perspective during a conversation (Nadig & Sedivy, 2002). The present study further explores whether 3-year-old children can do so, and even switch among the conversational partners' perspectives when there is more than one partner.

The present study set up a context based on a referential communication game. One of the two adults is always ignorant of a target object that the children know, while the other one may know or not know the target object. Both adults would ask the children to point to the target. Children's eye movements were recorded to show whether they less consider the target object when the innocent adult referred to it.

On the one hand, it is confirmed that 3-year-old children take the innocent adults' perspective when comprehending their language. On the other hand, the children's target preference was larger when both adults were innocent. That is, they overestimate the innocent adults' knowledge when the other adult knows the target objects. In sum, children resolve the definite reference according to the integrated perspectives of two speakers, instead of flexibly switching between two perspectives.

[P3.19]

### **Measuring statistical learning ability in children (5 y/o) using artificial speech segmentation**

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<sup>3</sup>University of Coimbra

The ability to extract regularities from sensory input, often without explicit awareness, is known as statistical learning (SL). Evidence suggests that SL is a stable ability across individuals, independent of other general capacities such as intelligence. SL might therefore be a promising measure for predicting cognitive development. However, there is still a need for reliable measures of SL at the level of the individual. The ongoing TULIP (Towards Understanding Learning In Preterms) study investigates whether several cognitive skills measured at the age of 5 are predictive of academic achievement at the age of 7, comparing term- and preterm-born children. We include SL as a possible predictor expected to predict language skills. While recording EEG, we let children listen to an “alien language” consisting of trisyllabic pseudowords without their knowledge. We look at how well words are learned based on two measures. From the EEG data, we compute an online measure of SL based on neural entrainment. Children also perform a statistically induced chunking recall (SICR) task. In parallel, we conduct a test-retest study to test the reliability of these measures. I will present the study design as well as some preliminary results.