**COM2020 - TALKS**

**Abstracts**

**EDUCATION**

**Valeria Agostini, Ian Apperly and Andrea Krott**

*The earlier, the smarter. Socio-cognitive advantages of learning a new language in Early Years of school*

An early start into second language learning is commonly seen as important for a future mastery of the target language and is therefore usually welcomed by parents and educators. However, there are other non-linguistic reasons which speak in favour of early foreign language learning and can motivate children’s multilingual experience from a very early age. The presence of two languages in the mind has been shown to be beneficial for various non-linguistic cognitive skills. Bilingual children have shown advantages in executive function measures, demonstrating superior abilities in control over attention and switching between rules (Bialystok & Martin, 2004). Young bilinguals have also revealed a less egocentric approach in solving perspective taking problems (Greenberg, Bellana & Bialystok, 2013), have outperformed their monolingual peers in measures of flexible thinking (Leikin, 2013), and have been found to possess enhanced pragmatic skills, regardless of their active competence in the second language (Fan, Liberman, Keysar & Kinzler, 2015). We investigated the impact of foreign language learning at school on a range of non-verbal skills and conversational perspective taking skills. We recruited three groups of 4- to 5-year-old children who experienced only English at home and who attended Reception classes in Primary schools in England. One group attended bilingual schools, another group had weekly Modern Foreign Language classes at school and the third group served as a control group, not having any second language education. We tested the children in tasks of L1 receptive vocabulary (British Picture Vocabulary Scale 3; Dunn, Dunn, Whetton & Burley, 2009) non-verbal reasoning (Coloured Progressive Matrices; Raven, Raven & Court, 1998), attentional control (Attention Network Test; Rueda et al., 2004), switching (Dimensional Change Card Sorting; Zelazo, 2006), and conversational perspective taking (Director Task; Keysar, Barr, Balin & Brauner, 2000) in the first few months of the school year and 24 weeks later. Results show that both groups of L2 learners outscored the control group in the perspective-taking game at the second (but not first) testing point. Pupils attending bilingual schools showed an additional enhanced progress in their switching abilities and L1 vocabulary acquisition. These results suggest that even a limited weekly exposure to a L2 has an impact on children’s socio-cognitive development, but a more substantial immersion in a bilingual environment is needed to boost cognitive flexibility.

**Eowyn Crisfield and Aaron Deupree**

*Translanguaging pedagogy in a multilingual boarding school: small answers to big questions?*

This paper presents a pilot study on implementing a translanguaging pedagogy in an international boarding school. Boarding school students face two particular challenges. The first is that they often begin their English-medium education in secondary school, rather than in primary school. At this level, the dual challenge of learning content while learning language as well is significant. The second is that they are often linguistically isolated, having few or no peers who speak their language for educational, social-emotional, and linguistic support. It would seem that a translanguaging approach in the classroom could be helpful in mitigating both of these challenges. However, there is little concrete research on the educational implications of integrating various L1 languages in the same classroom, and none on this particular population. The study seeks to illuminate both the potential linguistic and academic benefits of translanguaging with this target group, and also the attitudes of teachers to the integration of L1 language in learning.  
The study took place over six months, tracking three teaching cycles in each of three disciplines. Each teaching cycle consisted of a series of lessons on a single topic, with a written final product for assessment. Teachers were coached in the use of translanguaging throughout the process, and implemented a number of translanguaging cycles, based on an input-processing-output model. Student results were tracked, and in the final assessment were compared to similar cohorts that had completed the same teaching cycle in English only. In addition, qualitative data was collected through questionnaires and interviews, focusing on teacher attitudes and experiences using the translanguaging model.  
The goals of this study were two-fold. Firstly, although translanguaging is currently the subject of much research, it is not clear how to extrapolate findings from one context to another when teacher, language, and student factors vary immensely. Therefore, this study will provide situation specific evidence on the effects of translanguaging when used in this context, and with this target population, which the school can then use to make evidence-based decisions for their students. Secondly, the study hopes to establish a clear framework for implementing translanguaging pedagogy so that further research can be carried out in this, and other contexts.

**Raees Calafato**

*Teaching multiple foreign languages: Classroom practices of multilingual teachers in Norway and Russia*

Countries, especially in Europe, have been implementing foreign language programs that seek to prepare the coming generations to participate in an increasingly multilingual global environment. As part of this trend, there has been a push to promote language learning via a multilingual approach through which teachers help learners to make use of their entire language repertoire when learning a new language. Research on this aspect of teachers' multilinguality, however, has often been limited in terms of publications, participant numbers, and depth. As a result, it is difficult to gauge to what extent teachers use multilingual approaches in the classroom, whether there are differences in approaches based on type of language taught, and if teaching multiple languages (one versus two versus three) leads to greater use of multilingual teaching techniques. My presentation will discuss the results of a mixed-methods study conducted in Norway and Russia (using an online questionnaire and semi-structured interviews) on the multilingual practices of 460 secondary school language teachers of English, French, German, Spanish, Italian, and Chinese who are multilingual and, in many instances, are teaching multiple languages simultaneously. The presentation will specifically focus on differences in teaching approaches based on the number and type of languages taught, as well as teachers’ self-reported proficiency in these languages. The results indicate statistically significant differences between teachers based on type and number of languages taught, as well as some differences based on country of origin. The study provides important insights into how different languages lead to a different mix of multilingual techniques and contains implications for teacher education programs and policies that seek to promote multilingual learning.

**Christopher Martin**

*Modern Foreign Language Learning: The impact of parental orientations on student motivation*

The decline in modern foreign language (MFL) learning in UK secondary schools is well-researched, particularly from the point of view of language attitudes and motivation (Williams et al., 2002; Bartram, 2006; Coleman et al., 2007; Coleman, 2009, 2011; Lanvers et al., 2016; Martin, 2019). The rationale for my research comes from an extensive appraisal of the literature on foreign language education, coupled with my own teaching experience. Six motivational constructs form the basis for investigation: general motivation, sense of achievement in MFL, internal attribution of success/failure in MFL, external attribution of success/failure in MFL, intrinsic motivation and extrinsic motivation.  
This presentation is from a doctoral study which provides a valuable insight into the extent to which parents influence their child’s motivation to learn a foreign language. An exploratory methodology was adopted in order to approach this study from multiple angles, using a sequential mixed-methods research design. A questionnaire was administered to parents (n=107) and children (n=494) in four secondary schools in the wider West Midlands conurbation. This was followed up by semi-structured interviews with five sets of parents and their children (n=10). This research design addresses a call from Dörnyei and Ushioda (2011) for more mixed-methods research in the field. Data from quantitative and qualitative data collection tools will be presented in order to give a fully rounded view of parental orientations towards language learning and how this could impact on their child’s motivation.  
Quantitative analysis showed that there was a strong, positive correlation between parent and child data for five of the six motivation constructs. Linear regression showed that parental independent variables such as level of general education, level of language education and ethnicity had statistically significant impacts on four student motivation constructs.  
Results from the qualitative analysis showed that parents had mixed experiences of language learning and there was much debate over the status of languages in the secondary curriculum. Parents were also cognisant of issues surrounding the impact of Brexit on the image of foreign languages and their future perceived importance given the global status of English. A noteworthy point was the students’ and parents’ positive view of the importance of languages for career progression and travel as well as the need for a more tailored approach to those who experience difficulties due to special educational needs.  
There is still much work needed to improve the current situation with foreign language learning in secondary schools in the UK. This study provides an interesting insight into the impact of parental orientations towards foreign language learning. As well as obtaining support from school leaders, improving the dialogue between schools and parents on the importance of language learning through information, advice and guidance (IAG) programs and careers education could make a small contribution to improving this.  
While switching costs in production have been explained in terms of top-down cognitive control (Green, 1998), researchers do not agree whether switching costs in comprehension should be interpreted in the same way. Within the BIA+ model (Dijkstra & Van Heuven, 2002), it has been claimed that the comprehension of code-switches can be explained sufficiently in terms of bottom-up activation of lexical representations. In the current electrophysiological study, L1 speakers of Dutch with high proficiency in L2 English (n = 63) completed a Flanker task, adapted from Adler et al. (2019), in which they intermittently read sentences with or without an alternational code-switch. With this ‘conflict-adaptation’ paradigm we examined whether reading a code-switch engages cognitive control that influences performance on a subsequent Flanker trial. Half of the participants were presented with Dutch sentences and Dutch to English code-switches, while the other half were presented with English sentences and English to Dutch code-switches. The data were analyzed using linear mixed effect models. On the P300 component, an electrophysiological correlate of cognitive interference (Neuhaus et al., 2010; Polich, 2007), we found a traditional Flanker effect, with larger amplitudes for congruent than for incongruent trials. The effect was modulated by a preceding code-switch and the direction of this modulation depended on the switching direction: the Flanker effect was smaller after a code-switch from L1 to L2 than after a monolingual L1 sentence, but larger after a code-switch from L2 to L1 than after a monolingual L2 sentence. This suggests that the L1 needs to be inhibited when reading a code-switch to the L2, while inhibition needs to be released upon encountering a code-switch from L2 to L1. These results thus show that reading code-switched sentences engages a domain-general cognitive control mechanism external to the lexicon.

**NEUROSCIENCE**

**Christos Pliatsikas, Lotte Meteyard, Joao Verissimo, Vincent Deluca and Michael Ullman**

*The effects of bilingualism on brain development from early childhood to young adulthood*

Bilingualism is known to affect the structure of the brain, as suggested by evidence for experience-dependent changes in metrics of grey and white matter in regions implicated in language learning, processing, or control{maybe bil vs. mon diffs here, as we say below}. However, limited evidence exists on how bilingualism influences the development of the bilingual brain, from early childhood to early adulthood. Here we address this question by examining the developmental trajectories of both grey and white matter structures in a large sample (N=711 for grey matter, N=637 for white matter) of bilingual and monolingual participants, aged 3-21 years. Metrics of grey matter (thickness, surface area, and volume) and white matter (fractional anisotropy, and mean, longitudinal, and transversal diffusivities) were examined across 32 cortical and subcortical brain regions and 20 tracts, respectively. We used generalised additive modelling to analyse the effect of age on brain development, and how age might interact with bilingualism. Our results indicate that, compared to monolinguals, the bilingual participants manifested distinct age-related developmental trajectories in several grey matter regions involved in language acquisition, processing, or control. The pattern seems to reflect slower loss of neural connections in the affected regions that is brought about by the bilingual experience. Similarly, significant effects of bilingualism on the integrity of several white matter tracts that provide connectivity between the affected grey matter regions suggest optimisation of networks involved in language acquisition, processing, or control as a response to the experience of bilingualism. Overall, the findings suggest that the bilingual experience directly affects the development of the structure of the brain.

**Valerie Shafer, Tanja Rinker, Sarah Kresh, Miwako Hisagi and Eve Higby**.

*Neural Measures of Encoding and Discrimination of American English Vowels by Japanese, Russian and Spanish Second Language Learners of English*

The goal of this study was to examine to what degree neural measures of second language (L2) speech perception reflected first language speech perception routines and/or proficiency in the L2. Electrophysiological measures of discrimination (mismatch negativity, MMN) and encoding (T-complex) elicited to American English (AE) natural speech "ahpa" as in "hot" and "uhpa" as in "hut" were obtained from 35 Japanese, Russian and Spanish L2 learners of English. These vowels are particularly difficult for L2 learners of English, but Japanese listeners may be able to use the vowel duration difference ("uhpa" is shorter in duration than "ahpa") as a cue because Japanese distinguishes vowel length phonemically. All three groups showed significantly poorer behavioral discrimination of the two vowels than American English controls, but the Spanish group showed the worst performance. The Japanese and Russian groups, but not the Spanish, showed a significant MMM to "apha" when "uhpa" served as the standard (frequent) stimulus in an oddball task. The AE listeners also showed a significantly earlier MMN than the Japanese and Russian participants. This earlier MMN is likely to reflect discrimination of the vowels on the basis of spectral information, which is available from the onset of the stimulus. The left hemisphere T-complex Tb peak amplitude measure of encoding (between 160 and 210 ms) revealed that the Japanese listeners were particularly sensitive to the stimulus duration. Over half of the Russian and AE participants showed a pattern similar to the Japanese group. In contrast, most Spanish listeners exhibited a Tb pattern that did not differ between "ahpa" and "uhpa", suggesting little sensitivity to vowel duration. We interpret this finding to indicate that Japanese listeners used their L1 perceptual routines to efficiently extract the vowel duration difference. The Russian listeners may have shown better discrimination than the Spanish group because they were more proficient (by self report), which allowed them to access the spectro-temporal difference between the vowels, although less efficiently than the AE participants, who showed the earlier MMN. These findings support Strange's Automatic Selective Perception Model (Strange, 2011) that L2 listeners fall back on their L1 speech perception routines, but also suggest that increasing proficiency with the L2 can lead to improved encoding and discrimination of L2 speech information. Future studies will be needed to further examine how L2 proficiency modulates automatic speech perception routines for both L1 and L2 categories.

**Evelyn Bosma and Leticia Pablos**

*Switching direction modulates the engagement of cognitive control in bilingual reading comprehension: an ERP study*

While switching costs in production have been explained in terms of top-down cognitive control (Green, 1998), researchers do not agree whether switching costs in comprehension should be interpreted in the same way. Within the BIA+ model (Dijkstra & Van Heuven, 2002), it has been claimed that the comprehension of code-switches can be explained sufficiently in terms of bottom-up activation of lexical representations. In the current electrophysiological study, L1 speakers of Dutch with high proficiency in L2 English (n = 63) completed a Flanker task, adapted from Adler et al. (2019), in which they intermittently read sentences with or without an alternational code-switch. With this ‘conflict-adaptation’ paradigm we examined whether reading a code-switch engages cognitive control that influences performance on a subsequent Flanker trial. Half of the participants were presented with Dutch sentences and Dutch to English code-switches, while the other half were presented with English sentences and English to Dutch code-switches. The data were analyzed using linear mixed effect models. On the P300 component, an electrophysiological correlate of cognitive interference (Neuhaus et al., 2010; Polich, 2007), we found a traditional Flanker effect, with larger amplitudes for congruent than for incongruent trials. The effect was modulated by a preceding code-switch and the direction of this modulation depended on the switching direction: the Flanker effect was smaller after a code-switch from L1 to L2 than after a monolingual L1 sentence, but larger after a code-switch from L2 to L1 than after a monolingual L2 sentence. This suggests that the L1 needs to be inhibited when reading a code-switch to the L2, while inhibition needs to be released upon encountering a code-switch from L2 to L1. These results thus show that reading code-switched sentences engages a domain-general cognitive control mechanism external to the lexicon.

**Elly Koutamanis, Gerrit Jan Kootstra, Ton Dijkstra and Sharon Unsworth**.

*Language co-activation in the simultaneous bilingual child’s lexicon: A primed eye-tracking study*

BACKGROUND The field of adult bilingualism provides considerable evidence for language co-activation, for instance in the form of between-language lexical priming effects (e.g., Dong et al., 2005; Kroll et al., 2006). The field of child bilingualism has however traditionally focused more on functional separation between languages rather than effects of language co-activation (e.g., De Houwer, 1990). Research on between-language lexical priming in children is limited and largely restricted to toddlers (Von Holzen & Mani, 2012; Singh, 2014), which reduces the number of priming conditions that can be compared within one experiment. Moreover, whilst the adult literature shows that individual-level factors can influence language co-activation effects (e.g., Van Hell & Tanner, 2012), these factors have not yet been systematically investigated in children. Therefore, the current study aims to uncover 1) to what extent between-language priming takes place in school-aged (4;10-9;2) Greek-Dutch simultaneous bilingual children, both at the phonological and the semantic level, 2) how between-language priming compares to within-language priming, and 3) how it is affected by children’s individual differences in proficiency, exposure and use.

METHOD We combined eye-tracking with picture selection, where children matched pictures to auditorily presented Dutch target words preceded by Dutch and Greek prime words. Following Von Holzen & Mani (2012) and Singh (2014), the relationship between prime and target was manipulated to create phonological overlap (e.g., between-language: roda(GR) ‘wheel’–rok(NL) ‘skirt’), semantic overlap (e.g., fousta(GR) ‘skirt’–rok(NL)), or semantically mediated phonological overlap (e.g., vrachos(GR) ‘rock’–rots(NL) ‘rock’–rok(NL)). Proficiency was assessed using sentence repetition and vocabulary tasks, exposure and use using a parental questionnaire. We predicted 1) priming effects at all levels of lexical representation, 2) stronger within-language than between-language effects, and 3) stronger priming effects for more proficient participants, both in within- and between-language conditions.

RESULTS 1) Generalized and linear mixed effects models of children’s accuracy and reaction times revealed between-language priming effects at the phonological and semantic level. 2) To a lesser extent, priming effects appeared in within-language conditions. 3) Priming in both within- and between-language conditions interacted with individual differences in participants’ Greek and Dutch proficiency, exposure, and use, most notably in the mediated priming conditions. Our prediction for the eye-tracking data is that there will be priming effects in all within- and between-language conditions, given the more direct and sensitive nature of this method.

DISCUSSION These results provide new evidence for language co-activation in bilingual children at both the phonological and the semantic level of lexical representation, and demonstrate that the degree of co-activation depends on individual-level factors. By showing which sources of variation between bilingual children constrain their lexical processing, these results also contribute to our understanding of individual differences in language processing in general.

**MIGRATION**

**Konstantina Olioumtsevits, Despina Papadopoulou and Theodoros Marinis**

*Vocabulary learning in migrant and refugee children: Teaching and assessment approaches*

The objective of the study is to explore the efficiency of three vocabulary interventions in bilingual children with a migrant and refugee background. The interventions tested are flashcards, pantomime and context. Using visual aids, flashcards effectively facilitate a form-meaning connection in an attractive and engaging way1. Pantomime incorporates movement and game, which have been found to boost vocabulary learning2. Lastly, context seems to provide the possibility to perceive that no words exist in isolation as well as to encounter all meanings of a word3. Nevertheless, there are so far no studies that compare flashcards, pantomime and context in a systematic way, while studies that in some way assess those teaching techniques with migrant and refugee populations are scarce. Therefore, the present study aims to examine firstly whether the afore-mentioned teaching techniques enhance the migrant and refugee pupils’ vocabulary in Greek, and secondly which technique is more appropriate and efficient for the given population.  
The participants were fifty-five pupils in Greek Reception Classes between the ages of 7 and 12 years, divided into two groups, the experimental (25 pupils) and the control group (20 pupils). The students’ first languages were Farsi, Arabic and Kurdish, which are currently the most frequent home languages of migrant and refugee children enrolled in Greek formal education. The experimental group attended three vocabulary interventions – flashcards, pantomime and context. Every intervention was completed within two sessions, with each one of them lasting one hour. For all vocabulary interventions, “environment and nature” constituted their thematic domain. The target-words involved fifteen nouns and fifteen verbs (i.e., five nouns and five verbs per intervention) selected based on the word frequency database HelexKids4 and the word lists for language learning Kelly5. The use of students’ first languages was also encouraged during teaching.  
The learning outcomes of all interventions were evaluated through receptive vocabulary short tests, implemented before and immediately after each intervention. Moreover, the students’ vocabulary knowledge was assessed by means of an oral word association and a word-picture matching task, conducted before all interventions, as well as one month and four months after the completion of all interventions. Furthermore, a background questionnaire, a screening test, the raven’s test and a digit backwards test were employed in order to collect detailed metadata as well as assess students’ proficiency level, general intelligence and verbal working memory.  
Preliminary results from the short tests and the word-picture matching task indicate that all three interventions improve students’ vocabulary skills. However, pantomime seems to show the greatest vocabulary enhancement, whereas context seems to show the undermost. Furthermore, first analyses of the word association post-tests show fewer nonverbal and more appropriate responses by the experimental group compared to those by the control group.

**Susan Joffe**

*An Adult Migration Model of Second Language Motivation*

The importance of motivation in L2 learning has been studied extensively for over fifty years, contributing to our understanding of L2 motivation among high school and college students from many language backgrounds (Gardner 1959; Dörnyei & Ushioda 2009; Taguchi, Magid, & Papi, 2009; Papi 2010; Oakes 2013; Teimouri 2017; Al-Hourie 2018). However, little research has been devoted to the study of L2 motivation in adult immigrant populations. According to the United Nations International Migration Report (2017) there are 258 million international migrants worldwide, and their median age is 39. While the report does not provide data on linguistic displacement, many if not most immigrants find themselves living in countries where their first language is not the majority language. The present study was an attempt to gain a better understanding of L2 motivation among adult migrants, an understudied population.  
This paper presents an L2 motivation model of adult immigrants (Joffe 2018). 300 adult L1 English-speaking immigrants to Israel (aged 19-70) responded to a 150 item questionnaire, which included 43 item L2 motivation questions, 7 Willingness to Communicate (WTC) questions (MacIntyre et al 2003) and 25 L1 and L2 daily language usage questions. All participants immigrated after the age of 18 (post-high school), and were resident in Israel between 1 and 51 years at the time of the study.  
Confirmatory Factor Analysis yielded a three factor L2 motivation model: (1) attitudes toward the use of the Hebrew language, (2) attitudes toward interaction with Hebrew speakers, and (3) instrumental motivation. For all three model factors, motivation decreased after the age of 40, as did WTC across social settings (dyads, small groups, and large groups). Age-related analysis showed that 30-39 years old reported making the greatest efforts to speak Hebrew proficiently, and reported using it more in their daily lives.  
In contrast to recent models of L2 motivation (Al-Hoorie 2018), this model does not include aspirational, future-oriented goals. Instead, the model contains factors that reflect present satisfaction in using the second language and in interacting with L2 speakers. External judgments of others (the fear of rejection or criticism by peers or family because of low L2 proficiency), are nearly absent in this model. Instead, we find autonomous, intrinsic instrumental motivation and the desire to use the L2 for employment and logistical goals, both of which are consistent with Deci and Ryan's Self Determination Theory (2008).  
The present findings extend our understanding of L2 motivational from students to immigrants and from adolescents and young adults across the lifespan of L2 learners. The differences between the current model and models of student motivation are explained by the participants' ages and life stages. Implications for research with diverse immigrant populations and older language learners are discussed.

**Tony Capstick**

*Migration literacies in Pakistan and the UK: a discourse-ethnographic approach to transnational literacies*

In the hegemonic discourse of governments, named languages are taken to be homogenous with, as well as markers of, the essential spirit of a particular group (Gal 2006: 15). In Pakistan this is exemplified by Urdu, which has become the symbol for Pakistani nationhood and national identity as a Muslim country (Rassool 2007). In this paper I draw from a four-year ethnography of migration literacies in Pakistan and the UK to look beyond proficiency in the ‘national’ language in order to investigate how Mirpuri migrants from the Azad Kashmir region of Pakistan select language features from across their repertoires, or rather ‘call upon different social features in a seamless and complex network of multiple semiotic signs’ (Garcia and Kano 2014: 261). These multiple semiotic signs can, for example, be seen in their writing in digital environments as Mirpuri migrants take up the affordances of new media to help them create new scripts for Punjabi and draw on a range of registers in English and Urdu as they translanguage online.  
Having looked at what migrants say on Facebook and the linguistic resources they used to say it, the second part of the paper explores how interactants define and justify the use of their language resources. Their choices are influenced by the evaluations individuals make about different language varieties because, Gal argues, language ideologies are ‘cultural ideas, presumptions and presuppositions with which different social groups name, frame and evaluate linguistic practices’ (2006: 13).The paper examines how language choices are (re)constructed by the key respondent in this study to identify the linguistic and rhetorical traces which he uses to describe his language practices.

**Vanessa Piccoli**

*Using digital tools in healthcare interactions with asylum seekers*

Since the 2015 refugee crisis, the number of migrants and asylum seekers arriving to France – as to many other European countries – has been increasing, and administrative and healthcare services have been facing significant difficulties to receive this new and superdiverse (Vertovec 2007) public. In particular, during institutional encounters effective communication is frequently hard to reach: asylum seekers and healthcare professionals do not always speak the same language and, when interpreters are not available, participants have to rely on their own communication skills and often get creative to try to understand each other (see for example Traverso 2017).   
A possible solution to cope with this situation is the use of digital tools. In fact, to facilitate intercomprehension participants can rely not only on general translation devices (like Google Translator) or visual supports (like Google Images), but also on ad hoc applications that have been created for this purpose in the last few years (e.g. RefugEye and TraducMed, both developed in France). But how often are these tools actually mobilised in institutional encounters? When it happens, how do participants use them? And to what extent do they help communication?   
On the basis of the examination of a large corpus of multilingual video-recorded interactions in France, this paper deals with communication between healthcare professional and asylum seekers, focusing on the use of digital tools during face-to-face interactions. Adopting a conversational and multimodal analysis approach (Sacks 1992, Mondada 2014), it will propose a sequential fine-grained analysis of some sequences where participants rely on digital tools to solve or prevent miscommunication. More specifically, it will show how these tools are mobilised, together with a large number of other verbal and non-verbal resources (such as reformulations, gestures, writing, etc.). Finally, a critical discussion will be held on the benefits and the limitations of using digital tools in a plurilingual and intercultural interaction.

**LANGUAGE AND LITERACY**

**Gunnar Jacob, Moritz Schaeffer, Katharina Oster, Silvia Hansen-Schirra and Shanley Allen.**

*‚Do what you are told‘ or ‚Do what you are primed for‘? - A cross-linguistic structural priming study with trained translators*

The study of the psycholinguistic mechanisms underlying translation has received considerable interest in the past decade. A key claim from the emerging body of studies in this field is that cross-linguistic structural priming, i.e. the tendency to re-use structures recently encountered in another language, plays a fundamental role in translation (e.g. Maier, 2009; Bangalore et al., 2016). For instance, Maier, Pickering, & Hartsuiker (2017), in a translation priming study, found that the structure used in a translated sentence crucially depended on the structure in the source sentence, and explained this result in terms of cross-linguistic structural priming. However, even a purely lexical translator, who relies entirely on word-for-word translation and completely ignores the underlying syntactic structure of the source sentence, would show robust, seemingly structural priming effects in translation priming studies. This raises the question whether cross-linguistic priming effects in translation tasks are genuinely structural in nature, i.e. whether they are really based on the activation of structural representations shared between the languages.   
We investigated this question in a cross-linguistic priming study with a sample of trained German/English translators (N=39). In a counter-balanced order, all translators participated in both a translation priming study, which required spontaneous translation of ditransitive German prepositional-object (PO) and double-object (DO) sentences into English, and a typical PO/DO cross-linguistic structural priming experiment based on a target-completion task, in which the participants read English prime sentences and subsequently had to spontaneously complete German target fragments. Both tasks were based on the same prime sentences. The results showed a robust priming effect in the translation task, with 17% more PO translations following PO primes than following DO primes. The completion task, in contrast, did not show any significant priming effect. If the effect observed in the translation task were due to the activation of a structural representation shared between languages, we should have also observed a priming effect in the completion task, particularly given that both tasks were based on the exact same prime sentences. We thus conclude that cross-linguistic structural priming does not play as crucial a role in translation as previously argued. Instead, priming effects in translation tasks, which have previously been interpreted as evidence for a crucial role of structural priming in translation, may actually be non-structural in nature. In addition, note that completion tasks typically show cross-linguistic priming in bilinguals without any translation training (e.g. Jacob et al., 2016). Thus, the fact that the completion task showed no priming effect in our study may suggest that trained translators are potentially even partly resistant to structural priming, in order to avoid superficial translations.

**Noorin Rodenhurst and Kate Messenger**

*Socioeconomic and Age Differences in Monolingual and Bilingual Children's Sentence Interpretation*

Background: Investigating children’s interpretation of sentences with novel verbs is an effective method for determining whether children have acquired syntactic representations, (e.g., Noble, Rowland & Pine, 2011). However, most research has been focussed on monolingual children’s syntactic development. Bilingual children from low-socioeconomic status (SES) typically have poorer language trajectories in terms of vocabulary and grammar than low-SES monolingual children, (e.g., Hoff, 2013). The current study explores monolingual and bilingual children’s developing sentence interpretation and the relationship between SES differences. We report preliminary data from low-SES children here; Study 2 will test high-SES children for comparison.  
Method: English-speaking monolingual three-year-olds (N=14) and five-year-olds (N=12) and Gujarati-/English-speaking bilingual three-year-olds (N=11) and five-year-olds (N=14) from low-income backgrounds completed a sentence interpretation task (Noble et al., 2011). Children viewed animations in a forced-choice paradigm whilst hearing transitive and intransitive sentences with novel verbs; their understanding of these syntactic structures and transitive role assignment was measured by their points to the corresponding video. Standardised receptive vocabulary (BPVS) and sentence structure comprehension (CELF-Preschool) measures were also collected; a parental questionnaire determined children’s SES and language experience.   
Sentence interpretation results: Overall, five-year-olds pointed more accurately than three-year-olds, but monolinguals did not outperform bilinguals, though results differed across sentence structures: there was no significant difference between monolingual and bilingual three-year-olds’ interpretation of transitive sentences, (p= .83), or intransitive sentences (p= .85), but monolingual three-year-olds were significantly better than bilinguals in assigning semantic roles to transitive structures, (p= .009), a difference that disappeared in five-year-olds, (p= .22). At five, monolinguals differed from bilinguals in interpreting intransitives (p= .032), but not transitives (p= .98).   
Language measure results: Monolingual three-year-olds scored significantly higher than bilingual three-year-olds on receptive vocabulary, (p<.001) but this difference disappeared in five-year-olds (p= .20). Monolingual children also scored significantly higher than bilingual children on sentence structure comprehension measures at three (p= .003) and five years (p= .003).   
Conclusion: While bilingual children from low-SES backgrounds showed low performance on many language and sentence interpretation measures, they were not always outperformed by their low-SES monolingual peers on the sentence interpretation tasks. This suggests that SES may be as much a factor in bilingual children’s poorer language trajectories as language background, in support of previous research finding poorer syntactic development in low-SES monolingual children, affecting sentence comprehension (Huang, Leech, & Rowe, 2017). The relative lack of significant differences between bilingual and monolingual children on more sentence and language measures at age five suggests bilingual children’s vocabulary and syntactic development undergoes rapid growth between the ages of three and five, likely related to full time schooling in English. Comparisons to three and five-year-old children from high-income backgrounds will help explore the impact of age and SES on developing sentence interpretation further.

**Rhona Amos, Kilian Seeber, Martin Pickering and Robert Hartsuiker**

*Prediction during consecutive interpreting in noise*

Prediction makes rapid comprehension easier for both native and non-native listeners. We might expect that prediction would be particularly advantageous during the difficult task of consecutive interpreting, when consecutive interpreters must rapidly comprehend an utterance before planning and producing its translation.  
Consecutive interpreters often listen in their second language (L2), sometimes in noisy settings. Background noise may increase cognitive load, and cognitive resources are required for prediction. However, when speech is more difficult to understand, listeners may rely more on top-down processes, such as prediction. Given the particular advantage of prediction in consecutive interpreting, a consecutive interpreting task may increase predictive processing.  
We report an eye-tracking study that used a visual-world paradigm to investigate to what extent highly proficient L2 speakers predict in noise, and whether a consecutive interpreting task affects predictive processing. Based on Ito et al. (2018), 24 bilingual Dutch-English Masters students studying at Ghent University’s Faculty of Translation, Interpreting and Communication heard an English sentence containing a highly predictable word (e.g., The dentist asked the man to open his… mouth a little wider). Participants viewed a visual scene which appeared 1000ms before the onset of the predictable word. It contained four objects, one of which was either a target object (mouth), an English phonological competitor (mouse), or an unrelated object (bone). All sentences were presented on a speech-shaped sound background at a signal-to-noise ratio of 0 dB.  
Participants either listened to or else listened to, and then consecutively interpreted, 30 highly predictable sentences. Task order was counterbalanced. We considered whether 1) L2 speakers predict when listening in noise 2) whether L2 speakers predict word form in noise and 3) whether L2 speakers predict more when they consecutively interpret sentences.  
We modelled the time-course of fixations to the critical object in the target and English competitor conditions as compared to the baseline condition from 1000ms before word onset until 1000ms after onset. Our results show a robust prediction effect for highly proficient L2 speakers when they comprehend speech in noise. Over both tasks, we found significantly more fixations (t>2) on the target object compared to the unrelated object from -550ms before word onset until 1000ms after word onset. Participants also fixated the English phonological competitor significantly more than the unrelated object from -750ms to-600ms.  
We also analysed our results by task. L2 speakers predicted both when they carried out a consecutive interpreting task (from -550ms before word onset) and when they carried out a listening only task (from -500ms). However, there was no significant difference in prediction patterns between the two tasks.  
We discuss the implications of these findings for theories of prediction in psycholinguistics and in interpreting.

**Osmer Balam, Usha Lakshmanan and M. Carmen Parafita Couto**

*Gender Assignment Strategies among Spanish/English Simultaneous Bilingual Children*

This study examines how a group of Spanish-English simultaneous child bilinguals from Miami Dade, Florida assign gender to both Spanish (their heritage language) and English nouns. Both Spanish (n = 1872) and Spanish-English (n = 229) mixed nominal constructions were extracted from oral CHILDES narratives (Pearson 2002) produced by 40 child Spanish-English bilinguals of different grade levels (second graders vs. fifth graders) and instructional programs (English immersion vs. two-way bilingual) from Miami Dade, Florida. The sample included twenty 2nd graders (ages 7;0 – 8;0) and twenty 5th graders (ages 10;0 – 11;0). The children across the two instructional programs and grade levels came from homes where the language of the home was either (i) mostly Spanish or (ii) Spanish and English equally (from birth until age 5). Results revealed that in Spanish nominal constructions, children across both instructional programs and grade levels evinced native-like acquisition of grammatical gender, with rates of mismatches below 5%. In mixed nominal constructions, children overwhelmingly assigned the masculine gender to English nouns. Notably, irrespective of their language experience within the home and school domains, simultaneous Spanish/English bilingual children displayed a preference for the masculine default gender strategy rather than the analogical criterion when assigning gender to English nouns with feminine translation equivalents. This suggests that from the age of seven, when assigning gender to English nouns with feminine Spanish equivalents, simultaneous Spanish/English bilingual children show a consistent predisposition towards the employment of a default gender strategy in bilingual speech. We discuss our findings in relation to the notion of hybridity in Spanish/English bilingual speech and to asymmetries found between child and adult Spanish/English bilingual populations, in particular Valdés Kroff’s (2016) study on gender assignment among adult Spanish/English bilinguals from Miami, Floria.

**HEALTH**

**Marco Calabria, Nicholas Grunden, Federica Iaia and Carmen García Sánchez**.

*Interference and facilitation in phonological encoding: two sides of the same coin? Evidence from bilingual aphasia*

There is a debate surrounding facilitation and interference effects of phonological similarity during naming and, specifically, whether bilinguals employ inhibitory control processes to manage lexical competition or whether these effects might be the product of incremental learning or differential priming (Finkbeiner, Gollan, & Caramazza, 2006). In the present study we investigated the naming performance of bilingual patients with aphasia as a source of evidence that might help to disentangle the nature of the underlying mechanisms of lexical retrieval. Specifically, we aimed to explore the underlying mechanisms that link phonology and lexical retrieval by measuring the phonological blocking effect, as an extension of our previous study on semantic interference (Calabria, Grunden, Serra, García-Sánchez, & Costa, 2019).   
To do so, we recruited Catalan-Spanish bilinguals with aphasia (n=13) and age-matched healthy controls (n=15), all with language profiles consistent with early and balanced bilingualism. Participants completed a phonologically blocked cyclic naming task in each of their languages, where reaction times, word duration, and accuracy in naming were measured.   
Three main results were obtained: (1) accuracy was negatively impacted by phonological blocking in both languages for patients with aphasia, while this was not observed in healthy controls; (2) performance by patients and controls alike was similar across their two languages, suggesting that phonological processing would operate as language-independent; and (3) we did not find evidence of an interaction between the lexical level and articulation, suggesting that lexical access is a ballistic process (Mahon & Navarrete et al., 2019; Navarrete et al. 2014).   
In conclusion, as segmental overlap had a modulatory effect on word retrieval this implies a feedback signal from phonology to lexicon, as predicted by interactive models (Dell, 1986). Moreover, our results from patients with aphasia supports the view that this modulatory effect elicits interference, possibly via incremental learning mechanisms and in line with what has previously been proposed for lexico-semantic mapping. These mechanisms act in the same way within a bilingual’s two languages, suggesting that they are language-independent, at least at the lexico-phonological processing level.

**Isabel Ortigosa and Azucena García Palacios.**

*The effect of foreign language in fear extinction*

Language influences different aspects of our nature. One of these aspects are emotions. There is growing evidence showing that the use of a foreign language can affect how we modulate and regulate our emotions in comparison to a native language. The foreign language would provide an emotional distance that could be used in clinical psychology. Following an instructed fear paradigm, we explore this foreign language effect on emotions in the extinction of fear. The participants were presented some threat and neutral stimuli in the conditioning phase, in a native context, while they were presented the same stimuli in the subsequent extinction phase either in a native or in a foreign context, after receiving the information that the items had no threat association. We collected the size of the pupil diameter and the electrodermal activity as physiological measures of arousal in response to the fear conditioning and extinction. Our findings show that language context affects the fear extinction through verbal instructions, reducing the emotional reactivity and consequently proving the use of the foreign language effect in exposure therapy. This line of research constitutes an example of a positive and beneficial use of foreign language acquisition.

**Roberto Filippi and Peter Bright**.

*A Developmental Approach to Bilingual Research: The Effects of Multi-language Experience from Infancy to Old Age*

In 2016 we started a large-scale investigation of the effects of multilingualism on cognitive processes across the life span. In this Leverhulme funded project which ended in January 2020, we tested a total of 622 individuals from the age of 8 months to 80 years using a broad range of standardised and newly developed measures of cognitive ability.   
Age-appropriate tasks were selected for infants (N=56), with performance assessed via application of eye-tracking techniques. From the age of 7 to 80 years old we adapted and calibrated a battery of tasks that were used across all participants (N=566). A subset of them (N=118) underwent structural magnetic resonance imaging (MRI). For all participants we collected biographical, linguistic, lifestyle and socio-economic data.   
In this talk, we will present some key published and still unpublished results from this project. In particular, we will discuss how a developmental approach to multilingual research may help identify reliable effects of multiple language acquisition on cognitive development and decline.

**Arpita Bose, Yesi Cheng, Ranita Nandi, Aparna Dutt, Abhijeet Patra and Niladri Dash**

*Narrative Production Characteristics in Bengali-English Bilinguals with Post-stroke Aphasia and Alzheimer’s Disease*

Background & Rationale: Despite phenomenal increase in research activity in bilingualism, experimental research in bilinguals with linguistic impairments remains limited, especially for adults with language impairments, such as aphasia, dementia. This investigation fills a significant gap by reporting on the narrative production characteristics of Bengali-English bilinguals from two populations of neurological impairments: aphasia and dementia. In this research, we focus on the manifestation of cross-linguistic impairments in aphasia and dementia between the two languages (i.e., Bengali and English). Bengali is an Indo-European language with distinct differences from English in syntax (e.g., different word order in sentences, SOV) along with highly inflectional and complex morphosyntactic properties (Dash, 2015). It is spoken 7th most common language spoken; spoken by people from India, Bangladesh and their respective diaspora. There exists no published linguistic research in Bengali-English bilingual aphasia or dementia. Thus, analyzing and describing the narrative production characteristics of Bengali-English bilinguals with aphasia and dementia provide a significant contribution to both the theoretical understanding of language impairments as well as clinical significance for identifying and treating these impairments.  
  
Methodology: There were three groups of Bengali-English bilingual participants: three individuals with bilinguals with aphasia (BWA) with moderate Broca’s aphasia; Bilinguals with Alzheimer’s Disease (BAD), and a group of six age-, education- and gender-matched healthy controls (BHA). Pre-morbidly, all participants used predominantly Bengali at home and at work; post-morbid language dominance reflected their pre-morbid usage. A narrative sample was elicited in Bengali and English using the Frog story (Mayer, 1969). Using the Quantitative Production Analysis (QPA, Berndt et al., 2000), the narrative samples were analyzed for various syntactic, lexical and morphological features. Specific linguistic features of Bengali (e.g., postpositions, verbal and nominal morphology) were captured by including additional variables in the QPA scheme.  
  
Results & Discussion: At the time of this submission, we had completed analysis of BWA and BHA, and partial analysis of BAD and BHA. Comparison of the BWA and BHA characteristics in Bengali revealed both similarities (in syntactic and lexical level) and differences (in inflectional properties) from English agrammatic properties. At the syntactic level, BWA showed shorter and structurally simpler sentences, large number of ungrammatical constructions. At the lexical level, BWA showed preponderance of content words, with higher proportion of nouns than verbs, and severe limitation with closed class words, no pronouns were produced by any BWA. Our BWA showed intact verb inflection in Bengali, despite that Bengali verbal inflection is complex morphosyntactic process. Our BAD participants showed simpler and shorter sentences, and in most cases the sentences were grammatical. There was a preponderance of use of vague terms, high proportion of pronouns, and lack of specificity with the story. We discuss our results within the framework of cross-linguistic comparison of narrative features and importance of developing language specific markers.