Bilingualism and Specific Language Impairment (Developmental Language Disorder) Conference

University of Reading

27-28 June 2018

About the Conference

Bilingualism and Specific Language Impairment (Developmental Language Disorder) (Bi-SLI) 2018 is the 2nd conference within the Bi-SLI conference series and brings together researchers who wish to share results of studies on language development in bilingual children with SLI/DLD (Bi-SLI/DLD) compared to bilingual children with typical development (Bi-TD).

Several waves of migration within the past decades have led to an increase in the number of children worldwide who start pre-school in a language that is not the language spoken in the home. While speech and language therapists can successfully identify language impairment in monolingual children, this is far from obvious when the language they evaluate is the child's second language. Numerous studies have documented that bilingual children with Specific Language Impairment/Developmental Language Disorder (SLI/DLD) are over- or under-represented in speech-language therapy caseloads.

To address the issues of over- and underrepresentation of bilingual children with SLI/DLD (Bi-SLI/DLD) in speech-language therapy caseloads, the European Cooperation in Science and Technology (COST) Action IS0804 'Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment' developed the LITMUS (Language Impairment Testing in Multilingual Settings) tools series that were designed to facilitate the identification of SLI/DLD in bilingual children. It also started the Bi-SLI conference series with Bi-SLI 2015 at the University of Tours.

The keynote speakers in Bi-SLI 2018 are:

    Prof Ianthi Tsimpli (University of Cambridge)
    Prof Lisa Bedore (Temple University, Philadelphia)

Bi-SLI 2018 is followed by a knowledge transfer workshop on the 29th June for speech & language therapists and other professionals who support multilingual children.

The Conference is organised by the Centre for Literacy & Multilingualism at the University of Reading.

Organising committee
Theo Marinis,
Ludovica Serratrice
Emma Pagnamenta
George Pontikas

Programme

Wednesday 27th June 2018
Location: Building L022, Lecturing Theatre G01, London Road Campus, University of Reading

8.30-9.00	Registration
9.15-10.15	Keynote: Ianthi Tsimpli Bilingualism and communication skills in children with SLI
10.15-10.45	Anny Castilla-Earls: The Intersection between Language Loss and Language Impairment: The Role of Grammaticality
10.45-11.15	Coffee break
11.15-11.45	Yasmine Ouchikh, Lia Pazuelo, Zhamilya Yerimbetova, Jessica Scheuer and Klara Marton: Working memory updating and interference control in mono- and bilingual children with SLI
11.45-12.15	Klara Marton, Jessica Scheuer, Yasmine Ouchikh, Zhamilya Yerimbetova and Lia Pazuelo: Joint effects of bilingualism and specific language impairment: Interaction between speed of processing and cognitive control
12.15-14.00	Lunch and posters
14.00-14.30	Tessel Boerma and Elma Blom: Quasi-universal nonword repetition and narrative performance over time: A longitudinal study on 5- to 8-year-old children with diverse language skills
14.30-15.00	Laurie Tuller, Cornelia Hamann, Philippe Prévost, Solveig Chilla, Christophe Dos Santos, Sandrine Ferré, Racha Zebib, Eléonore Morin and Lina Abed Ibrahim: Identifying language impairment in bilingual children in France and in Germany
15.00-15.30	Natalia Meir: Nonword repetition: A comparison of bilingual children with SLI to younger and unbalanced bilinguals with typical language development
15.30-16.00	Coffee break
16.00-16.30	Nebiye Hilal San and Solveig Chilla: Identifying Specific Language Impairment in the L1 of bilingual Turkish–speaking children in Germany and France
16.30-17.00	Eleni Peristeri, Ianthi-Maria Tsimpli and Despoina Papadopoulou: Bilingualism effects in reference processing in Specific Language Impairment: Evidence from subject pronoun production and comprehension
17.00-17.30	Karen Rose, Carmit Altman and Sharon Armon-Lotem: Using monolingual assessment to distinguish between bilingual children with and without SLI
17.30-18.00	Hui Min Low, Julien Mayor, Tze Peng Wong and Jun Ho Chai: Does multiple language exposure increase risks of developmental language disorder?
19.00	Conference dinner

Posters
1. Aviva Soesman: Codeswitching as a Potential Indicator of Bilingual SLI: Lexical inaccuracies and Non-Elicited Codeswitching in a Sentence Repetition Task
2. Lina Ibrahim, István Fekete and Cornelia Hamann: Identification of Specific Language Impairment (SLI) in simultaneous and successive bilinguals by evaluating Sentence Repetition (SRT) and Nonword Repetition Tasks (NWRT) Using a Machine Learning Algorithm
3. Vicky Chondrogianni, Morna Butcher, Maria Garraffa and Thomas Bak: Developing language assessments for primary school children with and without Developmental Language Disorder in Gaelic-medium education **CANCELLED**

4. Ingrid Vangen, Camilla Bome and Jan de Jong: The development and pilot of a Norwegian adaption to the Language Impairment Testing in a Multilingual Setting (LITMUS) Sentence Repetition tasks
5. Petra Schulz, Angela Grimm and Rabea Lemmer: Are grammatical constraints vulnerable in children with Bi-SLI? Evidence from finiteness marking in German
6. Daniela Gatt, Ylenia Passiatore and Sabine Pirchio: Profiling the vocabularies of European migrant children attending preschool in a bilingual and a monolingual country using LITMUS-CLT: methodological considerations and preliminary outcomes
7. Atalia Hai Weiss: Naming Errors among Hebrew-English Bilingual Preschool Children

Thursday 28th June 2018
Location: Building L022, Lecturing Theatre G01, London Road Campus, University of Reading

9.00-9.30	Sveta Fichman, Joel Walters, Sharon Armon-Lotem and Carmit Altman: A cross-linguistic comparison of referential expressions in narratives of Russian-Hebrew bilingual children with typically developing language and with SLI
9.30-10.00	Lia Pazuelo, Luca Campanelli, Yasmine Ouchikh, Thorfun Aramridth, Jessica Scheuer and Klara Marton: Interference During Language Comprehension of Ambiguous Sentences in Bilingual and Monolingual Children with SLI
10.00-10.30	Adelaida Restrepo, Marilyn Thompson, Trina Spencer and Douglas Petersen: Does the CELF-P English and Spanish predict performance on response to intervention?
10.30-11.00	Coffee break
11.00-11.30	Elena Tribushinina, Elena Dubinkina and Nadezhda Rabkina: Can children with DLD acquire a second language with minimal exposure?
11.30-12.00	Angela Grimm and Petra Schulz: Language assessment for bilingual preschoolers: (When) do they catch up with their monolingual peers?
12.00-12.30	Theodora Papastefanou and Theodoros Marinis: "Cross-language transfer in bilingual children's phonological awareness and reading decoding has implications for the identification of bilingual children with language impairment"
12.30-14.00	Lunch and posters
14.00-14.30	Magdalena Łuniewska, Marta Wójcik, Joanna Kołak, Karolina Mieszkowska, Zofia Wodniecka and Ewa Haman: Bilingual and SLI children differ in LITMUS-CLT scores
14.30-15.00	Linnéa Öberg, Rima Haddad and Ute Bohnacker: Non-word repetition tasks as a screening tool for Language Impairment: Effects of non-word items, age and exposure patterns in typically developing Arabic-Swedish speaking bilinguals (4–7)
15.00-15.30	Stanislava Antonijevic, Clare Carroll, Mary Pat O'Malley, Ruth McMenamin, Rena Lyons, Laura Loftus, Margaret Rodden, Yvonne Fitzmaurice and Patrick Keane: Language Assessment of Monolingual and Multilingual Children Attending a Disadvantaged Background School: Using the LITMUS tasks
15.30-16.00	Coffee break
16.00-16.30	Natalia Meir, Revital Bazes, Marissa Hartston and Rama Novogrodsky: Language and Theory of Mind abilities of bilingual children with High Functioning Autism
16.30-17.00	Mada Alhassan and Theodoros Marinis: Developing a Sentence Repetition Task for children with and without Autism in Saudi Arabia
17.00-18.00	Keynote: Lisa Bedore Developmental Language Disorders in Two Languages: Patterns Typical and Impaired Language Performance in Spanish English Bilinguals
18.00.18.15	Closing of Conference

Posters
1. Rima Haddad, Linnea Öberg and Ute Bohnacker: Exploring the lexical abilities and language exposure patterns of Arabic-Swedish bilingual children (4-7) in Sweden
2. Ooi Carmen Chia-Wen: Cantonese relative clause comprehension and phonological short-term memory in children with SLI
3. Manish Madappa: Identifying Children with Specific Language Impairment Using LITMUS-MAIN- A Study of Kannada- English Bilinguals in India.
4. Marie Schnieders and Lina Abed Ibrahim: A Longitudinal Case Study on the Applicability of the German LITMUS-Sentence Repetition Task (SRT) and Non-Word Repetition Task (NWRT) to Late Successive Bilinguals
5. Anna-Lena Scherger: Comparing indicators for SLI in bilingual contexts in German 7-year-old children using LITMUS tasks
6. Mariam Komeili, Theodoros Marinis, Parvaneh Tavakoli and Yalda Kazemi: The relationship between internal and external factors on a Farsi-English Sentence Repetition task for Bilingual children

Alternates
1. Aviva Soesman: Codeswitching as a Potential Indicator of Bilingual SLI: Lexical inaccuracies and Non-Elicited Codeswitching in a Sentence Repetition Task
2. Lina Ibrahim, István Fekete and Cornelia Hamann: Identification of Specific Language Impairment (SLI) in simultaneous and successive bilinguals by evaluating Sentence Repetition (SRT) and Nonword Repetition Tasks (NWRT) Using a Machine Learning Algorithm
3. Vicky Chondrogianni, Morna Butcher, Maria Garraffa and Thomas Bak: Developing language assessments for primary school children with and without Developmental Language Disorder in Gaelic-medium education **CANCELLED**

Friday 29th June 2018
Location: Building L022, Lecturing Theatre G01, London Road Campus, University of Reading

Knowledge transfer workshop for Speech & Language Therapists

9.00-10.00	Registration & tea/coffee
10.00-12.30	Lisa Bedore: Narrative Based Language Interventions for Bilingual Children with DLD: Fostering Growth in Two Languages
12.30-13.30	Lunch break
13:30-15:00	Theodora Read: Intervention for children with ASD using Shakespeare

Abstracts

Keynote presentations

Wednesday 27th June 2018

9.15-10.15: Ianthi Maria Tsimpli: Bilingualism and communication skills in children with SLI

Language and communication skills are hard to distinguish in neurotypical populations. I will discuss some evidence from monolingual and bilingual children with SLI performing verbal and non-verbal tasks in order to identify asymmetries which may help identify the special contribution of bilingualism on language impairment.

Thursday 28th June 2018

17.00-18.00: Lisa Bedore: Developmental Language Disorders in Two Languages: Patterns Typical and Impaired Language Performance in Spanish English Bilinguals

Much of the work on bilingual language development and disorders focuses on the learner's first or second language but does not consider the profile in both languages. Because of divided input, performance in the bilingual's two languages does not appear to be fully independent. Thus, understanding the relationship between the acquisition of the two languages informs our expectations about language acquisition and profiles of language impairment. In this talk I will report on two lines of work. First I will discuss work exploring the extent to which language experiences predict outcomes in each of the child's languages between the ages of 4 and 9 years and consider how language experience influences the English and Spanish performance of children with and without developmental language disorders. Then, I will describe the dual language profiles of English Spanish speakers with and without language impairment in the same age range. This will help us understand how we can most effectively identify reliable clinical markers developmental language disorder that emerge from this work can be used to reliably identify language impairment in bilingual children.

Oral presentations

Wednesday 27th June 2018

10.15-10.45: Anny Castilla-Earls: The Intersection between Language Loss and Language Impairment: The Role of Grammaticality

Hispanic children are disproportionally underrepresented in special education programs and are less likely than other children to be identified as having speech and language impairments. The main challenge in correctly identifying language impairments (LI) in Spanish-speaking children lies in our limited understanding of the dual language learning processes during the school years. Current recommendations for the identification of LI in bilingual children prescribe that bilingual LI be indicated by low performance in both languages. However, this poses a critical barrier for the identification of typically developing children who are attending English-only schooling and experiencing a shift in language exposure between Spanish (the language at home) and English (the language at school). These children seem to go through a temporary stage in which their Spanish skills may not develop as a result of limitations in input and their English skills may not have fully developed yet. Further understanding of language skills in bilingual children is needed to improve the accurate identification of LI in this population.

This study examines the impact of the Spanish to English shift on the grammaticality of bilingual children. This study used a retrospective longitudinal approach to examine a large longitudinal database of Spanish-speaking bilingual children from the beginning of Kindergarten through the end of Second Grade. All children

in this study (N = 1030) produced a story-retell. All story-retells were audio recorded, transcribed and coded for percentage of grammatical utterances (PGU) in Spanish and English.

We used multilevel modeling with PGU as the outcome measure to analyze these data. First, we ran an unconditional means model and an unconditional growth model to examine variation in PGU in Spanish and English over time. These models revealed that PGU in Spanish at the onset of the study was approximately 98, and with time it decreased .48 per month. For English, PGU at the onset of the study was 42, and with time it increased .35 per month. For children in English-only schools, we observe acceleration in PGU in English that is higher than in those children attending schools with Spanish instruction. Patterns of deceleration in Spanish PGU were evident in both English-only and Spanish-instruction programs, but the deceleration was slower in Spanish instruction. Together, time and language of instruction accounted for 62% of the variation in PGU. Importantly, there is a period of time (around 8 years of age) in which both Spanish and English PGU seems to be below normal limits for clinical studies. Clinicians and researchers should be aware of this temporary stage in which bilingual children show low Spanish and English grammaticality, and avoid over-identifying these children as language impaired.

11.15-11.45: Yasmine Ouchikh, Lia Pazuelo, Zhamilya Yerimbetova, Jessica Scheuer and Klara Marton: Working memory updating and interference control in mono- and bilingual children with SLI

There is lacuna surrounding the effects of bilingualism and specific language impairment (SLI) on cognitive control (i.e., working memory (WM) and interference control). While monolingual children with SLI present higher-level cognitive deficits in addition to their language impairment, including difficulty in WM (e.g., Leonard et al., 2007; Marton, 2008; Montgomery, 2002) and interference control (Henry, Messer, & Nash, 2012; Marton, Campanelli, Scheuer, Yoon, & Eichorn, 2012; Marton, Kövi, & Egri, 2018), compared to their typically developing (TLD) peers, bilingual children with TLD consistently outperform their monolingual peers on these measures. Currently, there is no understanding of how these factors interact or contribute to the cognitive control abilities of bilingual children with SLI. It is possible that bilingualism attenuates the deleterious effects of SLI in cognitive control. Therefore, the current study examined the WM updating and interference control skills of Spanish-English bilingual and English monolingual children with SLI (BiSLI; MoSLI) aged 8-12 years on a visual n-back task to determine the joint effects of bilingualism and SLI, specifically whether bilingualism attenuates the WM updating deficits in BiSLI children.

Bilingual language proficiency was determined by the Language Experience and Proficiency Questionnaire (Marian, Blumenfeld, & Kaushanskaya, 2007) whereas language ability was measured with the Clinical Evaluation of Language Fundamentals – Fourth Edition (Wiig, Secord, & Semel, 2003). Further inclusion criteria for SLI were a score of 85 or higher on the Test of Nonverbal Intelligence – Fourth Edition (Brown, Sherbenou, & Johnsen, 2010) and a prior diagnosis by a certified speech-language pathologist.

A visual n-back task with manipulations in set-size and interference was employed to measure WM updating and interference control. In this letter n-back task, we included six conditions varying in set-size and interference. For set-size, the number of items that participants had to maintain in WM varied across three conditions (i.e., 0-back, 1-back, 2-back). In the interference conditions, retroactive and/or proactive lures were presented. Proactive lures were intrusion items that appeared before a target, whereas retroactive lures appeared after the target.

Although testing is still ongoing, our preliminary data suggest a main effect of set-size and interference condition, as well as an interaction between these factors. Participants from both groups performed significantly worse on the 2-back condition than on the 0-back and 1-back conditions. Similarly, proactive items generated greater difficulty than retroactive items. Results from the 2-back condition with proactive lures were the most difficult for everyone. Additionally, there was a three-way interaction between set-size, interference items, and language status (bilingual vs. monolingual).

Our preliminary findings contribute to research demonstrating the beneficial effects of bilingualism and suggest that bilingualism may attenuate the effects of language impairment on cognitive control.

11.45-12.15: Klara Marton, Jessica Scheuer, Yasmine Ouchikh, Zhamilya Yerimbetova and Lia Pazuelo: Joint effects of bilingualism and specific language impairment: Interaction between speed of processing and cognitive control

The focus in this presentation will be on the interaction between speed of processing and cognitive control in monolingual and bilingual children with specific language impairment (MO-SLI; BI-SLI). We designed our studies within a cognitive control framework that emphasizes flexibility (Botvinick et al. 2001). The bilingualism and the SLI literature provide different predictions about the relationship between language and cognitive control. Bilingual typically developing (TD) children show advanced cognitive control compared to monolingual peers (e.g., Engel de Abreu et al., 2012), whereas monolingual children with SLI perform more poorly than TD peers in cognitive control tasks (e.g., Marton et al., 2014). Thus, the question in this study was whether the cognitive benefits of bilingualism outweigh the deficits associated with SLI in cognitive control and speed of processing in children with BI-SLI.

Data will be reported from a number of studies including 8-12 years old mono- and bilingual children with SLI. Children's language proficiency (functional language use) varied between intermediate and high in their second language (L2), based on parents' reports on the Language Experience and Proficiency Questionnaire (LEAP-Q; Marian et.al, 2007). Children's language ability was measured with subtests of the CELF-4 (Semel et al., 2003) and with a vocabulary test (either the Expressive One-Word Picture Vocabulary Test; EOWPVT-4; Brownell, 2000 or the Bilingual Verbal Ability test; BVAT; Munoz-Sandoval et al., 1998). Children were classified as SLI if they had a history of speech-language therapy and scored <85 on the core subtests of the CELF. All children demonstrated average nonverbal IQ (>85) in the Test of Nonverbal Intelligence (TONI-4; Brown et al., 2010).

Cognitive control was measured with a series of verbal and nonverbal experiments that targeted working memory updating, directed forgetting and binding, and interference control. Highly proficient bilingual children processed information faster and showed more flexibility in adjusting to changing experimental conditions than their monolingual and lower proficient peers. These results suggest that bilingualism attenuates the deficits in children with BI-SLI. However, in more complex task conditions and with specific item types, children with MO-SLI and BI-SLI performed similarly, suggesting that in complex conditions Bi-SLI is more strongly affected by the language impairment than by bilingualism. For instance, all children showed a bias toward rejecting an item compared to accepting one, therefore all children were less accurate with target than with new distractor items (increased sensitivity to newness). Taken together, the results across studies suggest that depending on task complexity and on task type, different patterns of the bilingual advantage may be observed. Reaction time appears to be more highly affected by bilingualism than accuracy and the differences between the groups are more noticeable at lower task-complexity levels. With an increase in task complexity, the groups perform more similarly.

14.00-14.30: Tessel Boerma and Elma Blom: Quasi-universal nonword repetition and narrative performance over time: A longitudinal study on 5- to 8-year-old children with diverse language skills

Previous research (Boerma et al., 2015; Boerma, Leseman, Timmermeister, Wijnen, & Blom, 2016) showed that the identification of developmental language disorder (DLD) in 5- and 6-year-old bilingual children is supported by measures that do not tap into language-specific knowledge, but, instead, enable bilingual children to use prior experience with both their first and second language. A quasi-universal nonword repetition task (Q-U NWRT; Chiat, 2015) and narrative task analyzed on the macrolevel (MAIN; Gagarina et al., 2012) disentangled the effects of DLD and bilingualism, and demonstrated adequate diagnostic validity in both a monolingual and bilingual group of children. However, these results were based on children's performance at one time point. The question remains whether performance on these measures is stable over time and whether the results can be generalized to other ages.

The present study therefore followed a group of monolingual and bilingual children with and without DLD (N=128) over a three-year period, starting at age 5 or 6, and administered the Q-U NWRT and MAIN at yearly intervals. At each wave, we investigated if the measures could tease apart the effects of DLD and bilingualism, and if they were clinically accurate. Given the fluid developmental pathways of language in children with DLD (Reilly et al., 2014) and the influence of age on bilingual children's language outcomes

(e.g., Paradis, 2011), this research is highly important for the validation of the instruments as widely applicable diagnostic tools.

Results showed that children's quasi-universal nonword repetition scores at each time point were strongly correlated, whereas weak to moderate correlations were found for macrostructural narrative skills. No differences were found between performance of monolinguals and bilinguals on the Q-U NWRT and the MAIN, while children with DLD scored weaker than their typically developing (TD) peers. The magnitude of the effect of DLD decreased over time, but remained significant. Together, the Q-U NWRT and MAIN attained adequate diagnostic accuracy at each of the three time points. Sensitivity and specificity reached levels above 80% at wave 1, 2 and 3 in both the monolingual and bilingual groups of children.

The findings from the present longitudinal study demonstrate that the Q-U NWRT and MAIN remain sensitive to DLD and insensitive to bilingualism in 5- to 8-year-old children. This strengthens the conclusion of previous work that these instruments can reduce the bias against children with differing language experiences. In addition, the instruments' adequate diagnostic accuracy in a monolingual and bilingual group at each wave of testing indicates that they can effectively identify DLD in different learning contexts and at different ages. Validating the instruments with younger (3- and 4-year-old) children is a necessary next step for future work.

14.30-15.00: Laurie Tuller, Cornelia Hamann, Philippe Prévost, Solveig Chilla, Christophe Dos Santos, Sandrine Ferré, Racha Zebib, Eléonore Morin and Lina Abed Ibrahim: Identifying language impairment in bilingual children in France and in Germany

Detection of specific language impairment (SLI) in children growing up bilingually presents particular challenges for clinicians. Nonword repetition (NWR) and sentence repetition (SR) tasks have proven to be the most accurate diagnostic tools for monolingual populations (Conti-Ramsden et al., 2001), raising the question of their usefulness in bilingual populations. This study sought to determine the diagnostic accuracy of NWR and SR tasks informed by linguistic theory and developed as part of the Language Impairment Testing in Multilingual Settings (LITMUS) toolkit (Armon-Lotem et al., 2015), in two different national settings (France and Germany) in children with three different home language communities (Arabic, Portuguese, Turkish).

The LITMUS-NWR and -SR tasks, which were developed in parallel, were administered to 151 bilingual children, aged 5;6 to 8;11, in the two countries. Their first language (L1) was Arabic, Portuguese or Turkish. Sixty-four children were in speech-language therapy (SLT) and 87 were not. Children were also administered standardized language tests in each of their languages to determine likely clinical status (typical development (TD) or SLI), and information about bilingualism factors (e.g. early and current language use) and risk factors for SLI (e.g. early language development) were obtained from a parental questionnaire, also developed as part of the LITMUS toolkit. Monolingual controls included 47 TD children and 29 children with a diagnosis for SLI.

In accordance with numerous previous studies, LITMUS-NWR and -SR successfully identified SLI in the monolingual children, yielding good to excellent diagnostic accuracy. For the bilinguals, performance on the two tasks generally distinguished children likely to have SLI from children likely to have TD (Figures 1 and 2). Diagnostic accuracy in bilingual children for both NWR and SR was fair to good (Figure 3), but was necessarily linked to determination of clinical status based on standardized assessment in each of the child's languages. Positive Early Development, a composite risk factor for SLI, and not variables related to language exposure and use, generally constituted the strongest predictor for performance on the two tasks, constituting additional, independent support for the efficacy of LITMUS-NWR and -SR in identifying impairment in bilingual children. Detailed results by L1 will also be presented and discussed.

15.00-15.30: Natalia Meir: Nonword repetition: A comparison of bilingual children with SLI to younger and unbalanced bilinguals with typical language development

Nonword repetition tasks (NWR) have been shown to be reliable screening tools for diagnosing Specific Language Impairment (SLI) among monolingual and bilingual children (see Armon-Lotem & Meir, 2016; Chiat, 2015; Conti-Ramsden, Botting & Faragher, 2001). There is a large body of literature comparing monolingual children with SLI to younger children with typical language development (TLD). Some studies

show that monolinguals with SLI do not differ from younger controls (e.g., Rispens & Baker, 2012). Conversely, some studies demonstrate that children with SLI show lower accuracy on NWR tasks compared to younger language-matched children with TLD (e.g., Marshall, Harris, & van der Lely, 2003; Kapalková, Polišenská, & Vicenová, 2013; Topbas, Kaçar-Kütükçü, & Kopkalli-Yavuz, 2014).

The current study compares bilingual children with SLI to younger bilinguals with typical language development (TLD). Moreover, bilingualism offers a unique opportunity to match children not only on language skills but also for chronological age by comparing bilingual children with SLI to age-matched unbalanced bilinguals in their weaker language.

Four groups of bilinguals participated: Russian-Hebrew bilinguals with SLI (biSLI; n=23), Hebrew-dominant bilinguals with weak Russian (RUS-weak: n=39), Russian-dominant bilinguals with weak Hebrew (HEB-weak: n=19) and younger bilinguals (YOUNG, n=15). By definition, the YOUNG group was significantly younger (Mage = 47 months, SD = 4) than the other three bilingual groups (biSLI, HEB-WEAK, RU-weak) who were matched for age (Mage = 72 months, SD = 4).

Children`s vocabulary scores were measured in both languages using subtests of screening batteries (Russian: Gagarina, Klassert, & Topaj; 2010; Hebrew: Goralnik, 1995). Russian and Hebrew NWR tasks were used (Armon-Lotem & Meir, 2016).

The results for vocabulary indicated that the biSLI group scored similarly to HEB-weak, yet significantly lower that the YOUNG group in Russian. In Hebrew, the biSLI group had similar vocabulary scores to RUS-weak, yet the biSLI group outperformed the YOUNG group. As for the NWR tasks, the picture was different. In both languages, the biSLI group scored significantly lower than age-matched unbalanced bilinguals. Yet, in both languages the biSLI group obtained similar scores to the YOUNG group, who are 2 years younger. Linear step-wise regression indicated that for L1-Russian, SLI status and chronological age explained 26% of the variance, while for L2-Hebrew, SLI status and L2 vocabulary size were significant predictors that explained 41% of the variance.

The results of the study have important clinical and theoretical implications. This study contributes to the ongoing delay-versus-deviant debate regarding language development in children with SLI by suggesting that the initial delay becomes, in the long run, a persistent deviance. Finally, the study provides additional evidence on the mechanisms implicated in NWR tasks.

16.00-16.30: Nebiye Hilal San and Solveig Chilla: Identifying Specific Language Impairment in the L1 of bilingual Turkish–speaking children in Germany and France

Specific language impairment (SLI) is a deficit in the development of language abilities without any accompanying clear primary deficits, i. e. hearing loss, sensorimotor, cognitive, etc. problems. Monolingual children who score at least -1.25 SD in two different language domains and with a non-verbal performance IQ ≥ 85 are considered to be children with SLI (Leonard, 2014).

As SLI should manifest in all languages of bilingual children, the assessment of impairments could be carried out in the L1 and the L2. However, identification of SLI in bilinguals constitutes methodical and clinical confounds due to the overlap between the bilingual language characteristics and SLI markers. Despite particular clinical challenges due to the limited diagnostic instruments and knowledge in L1, the assessment of bilingual children´s L1 has become a major research interest. A practical proposal for the assessment of bilinguals has been to run monolingual standardized tools but to adjust the z-scores regarding language dominance (i.e. -1.5 to -2.25; Thordardottir, 2015).

Moreover, linguistic features for clinical markers may coincide with the characteristics of L1 varieties that may have undergone linguistic changes in migrant settings. This can lead to misdiagnosis of bilingual children. If the markers of SLI in Turkish and the specific features of Immigrant Turkish are compared (see Topbaş et al., 2016; Şimsek & Schröder, 2011), the overlap between Immigrant Turkish and SLI can be seen in both morphology and syntax, in that the features of Immigrant Turkish resemble clinical markers of SLI, especially in case marking and verbal morphology.

The present study analyzes the possibilities and limitations of adapting a norm-referenced language assessment tool (TELD-3:T, Topbaş & Güven, 2011) and a criterion-referenced assessment tool for language

sample analysis (Acarlar & Johnston, 2006) by comparing bilingual Turkish-German children (N=28) between 4;9 and 8;5 and bilingual Turkish-French children (N=20) between 5;5 and 8,6 with and without SLI. Spontaneous speech samples are collected by LITMUS-MAIN (Gagarina et. al, 2015). The preliminary results demonstrate that there is a significant difference (p<0.05) in the L1 performance of BI-TD and Bi-SLI in Germany and France in the TELD-3:T results. However, the outcomes of T-SALT with respect to case and verbal morphology suggest that there is no significant (p>0.05) difference between the Bi-TD and Bi-SLI groups in Germany and France.

These results could be attributed to the characteristics of Turkish L1 acquisition in migrant settings. Accordingly, the recommended z-score adaptation of this L1-assesment tool for Standard Turkish may be inappropriate for the use of T-SALT in language minority groups. A qualitative comparison on the linguistic markers of SLI and the linguistic features of Immigrant Turkish reveals new insights into the outcome of grammatical SLI in Turkish in migrant settings and for the assessment of Turkish.

16.30-17.00: Eleni Peristeri, Ianthi-Maria Tsimpli and Despoina Papadopoulou: Bilingualism effects in reference processing in Specific Language Impairment: Evidence from subject pronoun production and comprehension

Introduction. While use of object clitics has been defined as an area of notable difficulty for monolingual and bilingual children with Specific Language Impairment (SLI) (Tsimpli et al., 2016), the processing of subject pronouns that is dependent on the integration of morphosyntactic and discourse-level information in null subject languages (like Greek) remains an underexplored area. The present study aims to focus on subject pronoun comprehension and elicitation by comparing an online picture verification and a narrative task in monolingual and bilingual children with SLI.

Method. Participants included 15 monolingual (SLImono) and 15 bilingual (SLIbi) children with SLI (Mean age: 10;4), and 30 age- and vocabulary-matched typically-developing (TD) monolingual (TDmono) and bilingual (TDbi) children. The self-paced listening picture-verification task (Papadopoulou et al., 2015) included 20 referentially ambiguous sentences consisting of a main clause introducing two same-gender referents in subject (papus/'old-man') and object position (egonos/'grandchild') (see Appendix), followed by a subordinate clause with either a null or an overt subject pronoun/HE. Each sentence was matched to three different pictures; in one picture the actor of the action in the adverbial clause was the subject of the main clause, in the second the actor was the main clause object, and in the third the actor was a referent not mentioned in the sentence but included in the picture presented ('Other'; see Appendix). Children's referent preferences and RTs on final decision were recorded. In the narrative task, children's oral retellings were elicited by a picture story from the Edmonton Narrative Norms Instrument (Schneider et al., 2005). (In)definite DPs and null pronouns in subject position were coded for each discourse function (Introduction, Maintenance, Reintroduction).

Results. In the picture verification task, TDmono children equally preferred the Subject and Object referent for null pronouns and the Object referent for overt pronouns (p<.001). TDbi children preferred the Subject and Object referent in the null (p=.05) and overt pronoun (p=.002) trials, respectively. SLImono children showed preference towards the Other referent across all sentences (p=.033), while SLIbi children exhibited no referent differences in null pronoun trials and preference (p=.021) towards the Object in overt pronoun trials. In retelling, SLImono children used both definite and indefinite DPs to introduce a character, in contrast to the rest of the groups that used Indefinite DPs (p<.03). SLImono children produced equal rates of definite DPs and null pronouns in Reintroduction, in contrast to biSLI and TDmono children whose rates of definite DPs were higher than null pronouns (p<.05). TDbi children mainly used definite DPs in Reintroduction.

Discussion. The findings suggest that bilingualism improves pronoun-referent mappings in SLI, with the bilingualism effect being mainly evident in retelling rather than in the verification task. Findings are discussed in light of the discourse constraints of each task.

17.00-17.30: Karen Rose, Carmit Altman and Sharon Armon-Lotem: Using monolingual assessment to distinguish between bilingual children with and without SLI

The linguistic outcomes of bilingual children with typical language development (BiTLD) differ from monolinguals'. BiTLD language abilities are highly variable, asymmetric and influenced by the age of bilingual onset (AoO). Nevertheless, clinicians frequently assess bilingual children with tools developed for monolinguals with monolingual norms, resulting in inadequate diagnostic accuracy. Differential diagnosis is further challenged by the overlap in linguistic performance with their bilingual peers with specific language impairment (BiSLI) [1]. To serve the bilingual population, it is necessary to identify the linguistic subdomains that distinguish between bilingual children with and without language impairment and establish research-based boundaries as a function of AoO. This exploratory study aims to address the clinical challenge. Seven subtests of the CELF-Preschool-2 [2], an assessment designed for assessing the linguistic abilities of English speaking monolinguals, were administered to 135 English-Hebrew bilingual children aged 5;6-5;11 years old (M=68.61, SD=1.80). 129 were BiTLD (67 female, 62 male) and 6 were BiSLI (3 female and 3 male). The CELF-Preschool-2 [2] subtests included Concepts and Following Directions, Word Structure, Expressive Vocabulary, Recalling Sentences, Sentence Structure, and Receptive and Expressive Word Classes. BiSLI presented with poorer language outcomes in all the subtests, aside from Receptive Word Classes. In contrast to BiTLD, BiSLI outcomes were not influenced by AoO. Optimal cut-offs and diagnostic accuracy varied according to the subtest and BiTLD children's AoO. Concepts and Following Directions as well as measures dependent on grammatical knowledge ranged from good to excellent at correctly identifying a diagnosis, improving in accuracy with an increase in AoO. In contrast, subtests reliant on the lexicon, including the ability to understand and express relationships between words, were less useful for differential diagnosis. The findings demonstrate that monolingual standardised tests can be useful diagnostic tools for bilingual populations when norms are adapted in accordance with the AoO and linguistic subdomain investigated.

17.30-18.00: Hui Min Low, Julien Mayor, Tze Peng Wong and Jun Ho Chai: Does multiple language exposure increase risks of developmental language disorder?

Malaysians form a linguistically diverse population. Young children in Malaysia are exposed to a variety of language input patterns at home, some are raised in monolingual environments, whereas other are exposed to two, three or even more languages. Despite this sociolinguistic diversity, many parents are concerned whether the exposure of multiple languages has any adverse effect on early language development. In this study, the Malaysian adapted MacArthur-Bates Early Communicative Inventory: Words and Sentences (M-MCDI: WS) was used to assess early vocabulary development of 327 children in Malaysia, aged 16 to 30 months of age. Children with total vocabulary size below the 20th percentile were identified as being at risk of developmental language disorder (DLD). A less stringent cut-off criterion was used considering the sample size constraint. The vocabulary sizes of these children (risk-DLD group) were compared with the rest (non-DLD group) to identify potential predictors of developmental language disorder (DLD). Findings showed that language choice and the number of languages used in the child's environment were not risk factors. Rather, the age of first words and the age for onset walking, were found to correlate with risk-DLD, which together explained for 26.5% of the observed variance in risk-DLD. Specifically, the age of first words was identified as the strongest predictor of risk-DLD (p=.002), followed by the age of onset walking (p=.029). The mean age of first words reported for the non-DLD group was 12.8 months; while it was 15.3 months for the risk-DLD group. The mean age of onset walking reported for the non-DLD group was 12.0 months; while it was 13.1 months for the risk-DLD group. The findings highlighted the prominence of these two developmental markers in predicting risk-DLD for these multilingual children. Most importantly, multiple language exposure does not correlate with risk-DLD, as feared by some parents.

Thursday 28th June 2018

9.00-9.30: Sveta Fichman, Joel Walters, Sharon Armon-Lotem and Carmit Altman: A cross-linguistic comparison of referential expressions in narratives of Russian-Hebrew bilingual children with typically developing language and with SLI

The present research analyzes features of referential expressions in the narratives of Russian-Hebrew bilingual preschool children with typical language development (BiTLD) and with SLI (BiSLI), with a particular focus on case, definiteness and arguments' syntactic position. Both Russian and Hebrew mark accusative case, however, in Russian case is marked by noun inflection, whereas in Hebrew it is marked by an unbound preposition et followed by the definite article ha-. Russian has neither definite nor indefinite articles; Hebrew has obligatory definite articles. These cross-linguistic differences are expected to affect the syntactic position of arguments such that in Russian children will change the syntactic position of objects in order to mark definiteness. Since children with SLI have shown difficulties with case and definiteness (Dromi, Leonard, & Shteiman, 1993), this cross-linguistic difference is expected to be most challenging for children with BiSLI.

Narratives were collected from 45 bilingual Russian-Hebrew preschool children (15 with SLI) using a story retelling procedure. Two stories, constructed to be similar in length, microstructure and macrostructure properties, and the number of characters in the two languages, were retold by each participant in L1/Russian and L2/Hebrew. Analyses focused on cross-linguistic (Russian/Hebrew) and group (TLD/SLI) differences of referential expressions for each of three character functions (introduction, maintenance and reintroduction). Specifically, we examined features of case, definiteness and syntactic position (pre/post verbal) for referential expressions (noun phrase and pronouns).

For case in L1/Russian, children with BiSLI erroneously assigned case for maintenance and reintroduction functions, e.g. DAT instead of ACC (e.g. sobaka begala za koshkam dogNOM ranFEM.PERF after catPL.DAT). For definiteness in L2/Hebrew, children with both BiTLD and BiSLI used definite articles to introduce characters (where indefinite reference is expected) and omitted definite articles for character maintenance (where definiteness is required). For the obligatory marking of ACC case on NPs in object position in Hebrew (which appears post-verbally) bilingual children with SLI produced bare nouns, omitting both case and definiteness. Regarding cross-linguistic differences in syntactic position, in Russian children with BiTLD (but not BiSLI) used objects in pre-verbal position marked for case in order to convey given information or to stress a more prominent character (e.g. koshka ptenchika sxvatila catNOM baby-birdGEN caughtFEM.PERF), but preserved canonical SVO order in Hebrew.

In conclusion, Russian-Hebrew children with BiSLI show particular difficulty with referential expressions in object position where cross-linguistic differences and low proficiency create a challenge. While errors in definiteness occurred due to cross-linguistic influence in children with BiTLD and BiSLI, errors with case assignment in both Russian and Hebrew were unique to SLI.

9.30-10.00: Lia Pazuelo, Luca Campanelli, Yasmine Ouchikh, Thorfun Aramridth, Jessica Scheuer and Klara Marton: Interference During Language Comprehension of Ambiguous Sentences in Bilingual and Monolingual Children with SLI

Resisting interference from irrelevant information is a key process during sentence comprehension. Several studies have found that participants are less accurate and slower during sentence comprehension when there is interference among sentence elements (Gernsbacher, 1991; Norbury, 2005; Van Dyke & McElree, 2011). To study how bilingual and monolingual children with specific language impairment (SLI) process sentences with interfering items, we used the Structure Building Framework (SBF) by Gernsbacher (1991).

Although bilingual typically developing (TLD) participants were found to be skillful in resisting interference (e.g., Bialystok, 2009; Kovács, 2007), monolingual children with SLI exhibited difficulty suppressing irrelevant information compared to TLD peers (Marton, Campanelli, Eichorn, Scheuer, & Yoon, 2014; Marton, Kelmenson, & Pinkhasova, 2007; Van Dyke, Johns, & Kukona, 2014). In bilingual children with SLI, a potential advantage in interference control and contextual cue use might be expected based on the bilingual TLD data. To date, little is known about resisting interference in bilingual children with SLI. The goal of this

study was to examine the joint effect of bilingualism and SLI in resisting interference, specifically to explore whether bilingualism attenuates the negative effect of SLI.

Bilingual and monolingual children with SLI aged 8-12 years completed a lexical ambiguity task (based on Gernsbacher et al., 1990; Norbury, 2005) which tested the use of contextual information and resistance to interference. The sentences were either neutral, in which both meanings of the ambiguous word were acceptable (e.g., ''The boy touched the trunk''), or biased, in which only one meaning was acceptable (e.g., ''The boy opened the trunk''). Each sentence was followed by a probe word. Participants were asked to judge whether the probe was related to the sentence. The stimuli were presented both visually and auditorily and children had to respond by button press. In a second condition, the sentences were accompanied by pictures that served either as facilitators or distractors to the sentence content.

The preliminary accuracy results of a between-group analysis showed better ability in resisting interference in bilingual than in monolingual children with SLI. The reaction time data revealed that bilingual children with SLI were also faster across conditions compared to monolingual children with SLI. Although testing is ongoing, the accuracy results from a within-group analysis suggest no difference across conditions (with cue vs. no cue) in either group. The RT data revealed slower processing in the cued condition compared to the non-cued one, despite the lack of difference in accuracy between the two conditions in both mono- and bilingual children with SLI. Taken together, while bilingual children with SLI outperformed their monolingual peers with SLI in interference control, the 2 groups showed similar patterns in using contextual cues.

10.00-10.30: Adelaida Restrepo, Marilyn Thompson, Trina Spencer and Douglas Petersen: Does the CELF-P English and Spanish predict performance on response to intervention?

Low-income Latino children learning English in the US are at a greater risk of academic difficulties compared to those who are not language minorities (NCES, 2016).The current study examined whether the CELF Preschool in English and Spanish predicted bilingual preschool children performance on response to a narrative intervention for bilingual Spanish-English speaking children in a Head Start program in the United States.

Eighty one children participated in the randomized trial of the Puente de Cuentos narrative intervention (Spencer et al, 2017). Forty-two children participated in the intervention and 39 served as controls. Children were selected with Spanish higher than English skills on a sample and scored below a cutsccore of 8 on a narrative retell task. Children participated in the Clinical Evaluation of Language Functions – Preschool English and Spanish – Word Structure and Sentence Structure subtests before the intervention. Children were classified in two groups based on CELF English and Spanish performance. Those that scored below 1 standard deviation on 3 of 4 subtests (below 7 in each subtest), and those that scored 7 or above (3 of 4 measures indicated that they were at risk of LI in both languages). Children's performance was examined on another narrative retell, narrative comprehension, and vocabulary targeted in the stories. Head Start teachers delivered the intervention after receiving training on the intervention in small and large groups. Specifically, they provided 72 small group lessons four times a week and 36 large group lessons twice a week half in English and half in Spanish. Mostly teacher assistants delivered the Spanish intervention and classroom teachers delivered the English. In the intervention, children learned to retell personal stories with one episode, a causal or temporal relation, an emotion, and two vocabulary words per story. Children used symbols and gestures while learning to retell the stories and then removed. The progress monitoring form evaluated the following: story structure, episode, use of connectors, emotion terms, and vocabulary. Children were evaluated 3 times during the 7 months on all the measures: at the beginning, mid-point and at the end of the intervention.

Results indicated that all children made gains. Those in the intervention group made more gains than the control on all measures, except Spanish story structure. Children at higher risk of LI based on the CELF did not differ from those with no risk on the narrative retell, vocabulary and story comprehension. We then examined the relations between pre intervention measures and post intervention measures. The CELF Spanish pretests predicted Spanish story structure and vocabulary, and English vocabulary. English CELF pretests predicted English vocabulary. Results indicate that the CELF Preschool has limited but significant prediction on language performance.

11.00-11.30: Elena Tribushinina, Elena Dubinkina and Nadezhda Rabkina: Can children with DLD acquire a second language with minimal exposure?

Following the world-wide tendency towards inclusive education and early onset of English as a Foreign Language (EFL) instruction, many children with Developmental Language Disorder (DLD) are nowadays exposed to EFL already at primary school. However, current scholarship lacks crucial insights into how children with DLD respond to L2 learning with minimal exposure (usually 1-2 instruction hours per week), since research on L2 acquisition by this population has largely focused on naturalistic settings, where children usually receive plenty of exposure to the target language.

In this paper, we report the results of a two-year longitudinal study tracing the development of L1 Russian and L2 English skills in two groups learners with DLD: younger starters (onset of EFL instruction at age 8, N=20) and older starters (onset of EFL instruction at age 10, N=20). The performance of the DLD group was compared to that of typically-developing (TD) controls, matched for chronological age and amount of EFL exposure (90 minutes per week). Data collection started at the beginning of the school-year in which EFL instruction began. Proficiency in Russian was measured four times (beginning and end of Year 1; beginning and end of Year 2); proficiency in English was measured three times (after one, one-and-a-half and two years of instruction).

Not surprisingly, children with DLD were outperformed by TD controls on all L1 and L2 measures. After one year of EFL instruction, there were no differences between younger and older starters with DLD in receptive grammar, writing, reading and listening comprehension. Older starters outperformed younger starters on receptive vocabulary, but this difference disappeared after two years of instruction. These results are consistent with prior research on EFL learning by TD children demonstrating that age of onset has differential effects across linguistic domains (Muñoz, 2006).

Children with DLD had particular difficulty with the comprehension of negation and word order in English. Their performance on negatives improved from Time 2 to Time 3, but there was no improvement on the comprehension of word order. This difficulty might be due to typological differences between Russian and English in these two domains, since Russian, unlike English, allows double negation and has a flexible word order (with reliance on case markings).

An unexpected result was that the relation between L1 and L2 proficiency in the DLD group was weaker than in the TD group and also weaker than expected on the basis of earlier classroom research with TD children (Pfenninger, 2016; Siu & Ho, 2015). This result suggests that children with DLD might be less sensitive to typological similarities between languages (Blom & Paradis, 2015) and less capable of using positive transfer from their L1, possibly due to procedural learning deficits (Pierpont & Ullman, 2005).

11.30-12.00: Angela Grimm and Petra Schulz: Language assessment for bilingual preschoolers: (When) do they catch up with their monolingual peers?

Background and Aim: Recently, XX (2016) argued that the complexity of a linguistic phenomenon determines the pace of development in simultaneous bilingual (2L1) learners. Based on the standardized language test Lise-DaZ (Schulz & Tracy, 2011), they found that 2L1 children rapidly catch up with MON children in phenomena mastered early by monolinguals (e.g. verb meaning). The 2L1 learners showed a unique pattern for late-acquired phenomena (wh-questions, sentence structure), and resembled early second language learners (eL2) for very late-acquired phenomena (e.g. case, negation). For children's later development, this account predicts differences between 2L1 and MON children only in very late acquired phenomena. To test the prediction, the same participants were tested 14 months later.

Method: The children were tested in two test rounds with the language test Lise-DaZ. Three sub-scales assess comprehension skills (verb meaning, wh-questions, negation) and eight production (conjunctions, prepositions, focus particles, main verbs, auxiliary and modal verbs, Case, subject-verb-agreement, sentence structure). Test language is German.

Participants: 160 children participated in T1 and 137 in T2 (2L1 children: T1 n=41, mean age 4;4 years; T2: n= 38, mean age 5;6 years; AoO 3 months; eL2 learners of German: T1 n=70, mean age 4;3 years; T2 n=65, mean age 5;6 years; mean AoO 35 months; MON German children: T1 n=49, mean age 4;3 years; T2 n=37, mean age 5;7 years). The 2L1 and eL2 children had different L1s (mostly Turkish, Arabic and Slavic

languages). All children showed age-appropriate nonverbal IQ (assessed via K-ABC), were not assigned to speech-language intervention and had no indication of hearing deficits (assessed via parental questionnaire).

Results: In T2, significant group differences were found in the sub-scales wh-questions, negation, conjunctions, Case, sentence structure, and subject-verb-agreement. Post-Hoc Tests revealed significant differences between 2L1 and MON only for Negation and Case (p's <.05). In T1, the 2L1-children outperformed the eL2-learners in all sub-scales except for negation and Case; in T2 2L1- and eL2-learners no longer differed in any of the scales. The eL2-learners differed significantly from MON-children in 10/11 sub-scales at T1 and in 6/11 sub-scales at T2.

Discussion: In both test rounds, 2L1-children's language abilities resembled neither the monolingual nor the eL2-group. Consistent with our prediction, the 2L1 learners differed from MON in very late-acquired phenomena. In addition, after approximately 30 month of exposure, the eL2-group did not differ any more from the 2L1-group. The results suggest that overdiagnosis is particularly likely for late-acquired phenomena if MON norms are taken to assess bilingual children. We conclude a) that 2L1 learners need a separate norm in language assessment tools and b) that the linguistic properties of the tasks have to be considered in assessment.

12.00-12.30: Theodora Papastefanou and Theodoros Marinis: "Cross-language transfer in bilingual children's phonological awareness and reading decoding has implications for the identification of bilingual children with language impairment"

Background: Previous research has shown that growing up bilingually and acquiring two languages in their spoken and sometimes written form influences literacy development positively (Durgunoglu, Nagy and Hancin-Bhatt, 1993; Papafragou, Massey and Gleitman, 2006; Niolaki and Masterson, 2012). However, there is also evidence that bilingual children are sometimes over-identified with language impairment/delay or under-identified because teachers and speech and language therapists (SLTs) do not have appropriate assessments and/or norms for bilingual children. It is important to identify the similarities and differences of language and literacy development among typically developing bilingual children and bilingual children with language impairment and start developing norms for bilingual children (Bedore and Pena, 2008).

Aims: This study aimed at investigating effects of bilingualism in language and literacy skills of primary school children in the UK who acquire Greek as a minority and English as a majority language compared to monolingual English children in Year 1 and 3. The research question addresses whether or not bilingual children will have better literacy skills than monolingual children, and whether these skills could be transferred from one language to the other. We hypothesised that bilingual children will have better literacy skills in English than monolingual children because learning to read a transparent orthography (Greek) may enhance their reading skills in a language with opaque orthography (English) (Loizou and Stuart, 2003).

Methodology: 40 Greek-English bilingual children (Year 1=20; Year 3=20) and 40 English speaking children (Year 1=20; Year 3=20) participated in baseline tasks and tasks measuring phonological awareness (blending and elision) and reading decoding tasks (real-words and pseudo-words) in English. Parents completed the LITMUS-PABIQ questionnaire (Tuller, 2015) to obtain language history/use data.

Results: Two-way ANOVAs comparing bilingual and monolingual children's performance in Year 1 vs. 3 in each task indicated that bilinguals scored better than monolinguals across tasks (all p-values < 0.001) and children in Year 3 scored better than in Year 1 across tasks (all p-values < 0.001). There was a significant interaction between Group and School Year only in elision and pseudo-word reading (all p-values < 0.01). Post hoc tests using Bonferroni correction revealed larger the effect sizes in the difference between Year 1 and 3 in monolinguals than bilinguals and also larger effects sizes in the difference between monolinguals than bilinguals in Year 1 than in Year 3. No such asymmetries were present for blending and real-word reading.

Conclusion: Cross-language transfer of phonological awareness and reading decoding skills could result from reading instruction and/or learning to read in a language with transparent orthography (Greek) alongside a language with opaque orthography. These findings together with previous research (Durgunoglu, 2002; Geva, 2000) may assist teachers and SLTs to obtain a more accurate diagnosis of bilingual children with language impairment.

14.00-14.30: Magdalena Łuniewska, Marta Wójcik, Joanna Kołak, Karolina Mieszkowska, Zofia Wodniecka and Ewa Haman: Bilingual and SLI children differ in LITMUS-CLT scores

Cross-linguistic lexical tasks (LITMUS-CLTs, Haman, Łuniewska & Pomiechowska, 2015) were designed to enable distinguishing bilingual typically developing and SLI children on the basis of comparable vocabulary assessment in both child's languages. LITMUS-CLTs include four subtasks: object naming, action naming, object recognition and action recognition.

The design of CLT makes it also possible to measure the difference between noun and verb knowledge, and between passive and active vocabulary. These factors may be particularly important in the assessment of children at risk of language impairment. First, SLI children may suffer from word finding difficulties and consequently show much lower accuracy in word production than in comprehension (Capone & McGregor, 2005; McGregor et al., 2002; Messer & Dockrell, 2006). Second, SLI children may show greater difficulties in learning verbs, as compared to nouns (Black & Chiat, 2003; Windfuhr, Faragher, & Conti-Ramsden, 2002). Since bilingual children also show a bigger difference between comprehension and production (Gibson et al., 2012), it may be sometimes difficult to disentangle SLI from bilingual development. However, there is no reason to believe that bilingualism affects acquisition of a word class (nouns or verbs) in any particular way. Therefore, possibly SLI children can be distinguished from typically developing bilinguals on the basis of the size of nouns-verbs difference in vocabulary.

Here we tested 32 Polish-English typically developing bilingual children living in the UK, aged 4;4-7;0, and two groups of age-matched Polish monolinguals: typically developing (n = 32) and at risk of SLI (n = 32). The three groups were tested with a Polish version of LITMUS-CLT.

We found that both typically developing bilingual and monolingual SLI children scored lower than monolingual TD children in all subtasks, and there was no difference in accuracy between the two groups. Moreover, all three groups had higher scores in comprehension than in production, and in nouns than in verbs. As predicted, SLI children showed greater disproportion between nouns and verbs, and between passive and active vocabulary than typically developing children. However, contrary to our predictions, bilingual children did not present an increased receptive-expressive gap: the difference between passive and active vocabulary was of the same size in monolingual and bilingual typically developing children. On the other hand, bilinguals displayed a larger difference between noun and verb knowledge than the monolingual group.

We conclude that it is the receptive-expressive gap rather than noun-verb gap that could potentially be applied in screening for SLI in bilingual children. However, further studies on bilingual children with language impairment are crucial for verifying this hypothesis.

14.30-15.00: Linnéa Öberg, Rima Haddad and Ute Bohnacker: Non-word repetition tasks as a screening tool for Language Impairment: Effects of non-word items, age and exposure patterns in typically developing Arabic-Swedish speaking bilinguals (4–7)

Bilingualism is steadily increasing in Sweden, and Arabic is one of the most widely spoken languages. Despite this, the language characteristics of bilingual children are still largely unknown. At the same time, there is great confusion about what should be considered 'typical' bilingual language development relative to Language Impairment (LI).

Non-Word Repetition (NWR) requires the child to repeat a series of phonological nonsense forms. NWR is a potentially reliable method of screening for LI in bilinguals with limited exposure to one language, since performance on NWR tasks is less dependent on language proficiency than other language tasks such as sentence repetition (Thordardottir & Brandeker, 2013) and vocabulary (Thordardottir, 2011). At the same time, some evidence suggests that children are better at repeating non-words that share the phonological rules of real words in their language. Chiat & Roy (2007) found that prosodically structured non-words with complex segmental structure were particularly accurate at separating children with LI from their typically developing peers in English speaking children aged 2;6–4. They also found effects of length, with more errors present with increasing item length. However, lexico-phonological features manifest differently in different languages. Therefore, comparisons between languages regarding which types of non-word test items do best identify LI is needed. Cross-linguistic non-words provide an opportunity to test children's performance on a similar set of non-word items across a range of typologically different languages (Chiat, 2015).

In our talk, we will present some work in progress regarding different sets of NWR tasks in Arabic–Swedish speaking bilinguals age 4–7 years (n≈100) with typical language development. Four different sets of non-words are being used, varying in item length, segmental complexity, and word stress patterns. The first set of non-words contains items of 2–5 syllables with language specific properties pertaining to Swedish phonology, including complex segmental structure, variable word stress, and low frequency phonemes (Radeborg, Barthelom, Sjöberg, & Sahlén, 2006). The second set of items contains 1–3 syllables targeting segmental complexity, and consists of phonemes adapted to Lebanese Arabic (dos Santos & Ferré, 2016). The two last tasks used are the Swedish and the Arabic versions of the crosslinguistic LITMUS non-word repetition task, containing items of 2–5 syllables with simple segmental structure and quasi-neutral prosody (Chiat, 2015). For all of these different sets of non-words, we will look at effects of age and exposure to Swedish and Arabic respectively. The aim is to collect reference data for a large group of children with typical language development, in order to be able to compare the performance on these different NWR tasks to children with diagnosed LI.

15.00-15.30: Stanislava Antonijevic, Clare Carroll, Mary Pat O'Malley, Ruth McMenamin, Rena Lyons, Laura Loftus, Margaret Rodden, Yvonne Fitzmaurice and Patrick Keane: Language Assessment of Monolingual and Multilingual Children Attending a Disadvantaged Background School: Using the LITMUS tasks

In recent times the number of children speaking more than one language as well as the number of languages spoken in Ireland has increased (CENSUS, 2016). This poses a problem for early identification of children with language disability. The recommendation from relevant professional organisations is that multilingual children should be assessed in all languages that they speak. However, given the excess of 180 languages spoken in Ireland and language diversity in some urban schools this is not easy to accomplish. Therefore, the current study attempted to use language-neutral and English LITMUS tasks (Armon-Lotem & de Jong, 2015) as screening tools to identify children at risk of language disorder amongst those who speak English as a second language and also amongst monolingual English speakers. Specifically, we used quasi-universal (QU) and English language-like (LL) non-word repetition (NWR) (Chiat, 2015) and English sentence repetition (SR) (Marinis et al., 2011) tasks. Current and cumulative exposure to English, the age of acquisition (AoA) of English and socio-economic status (SES) were recorded. The study included convenience sample of 88 children attending a disadvantaged urban school in the West of Ireland. All 5-7 years old children who consented were included in the study irrespective of the existing disabilities or impairments.

Preliminary results indicate that on the QU- NWR multilingual children performed similarly to monolingual English speaking children with similar and relatively wide distribution of scores. Significant differences between multilingual children with later AoA and monolingual children were observed for English SR task where monolingual children outperformed multilingual children. Combining results of quasi-universal NWR and SR indicated that majority of the bilingual children with late AoA in English performed well on NWR with poor performance on SR indicating lack of exposure. However, some multilingual children as well as some monolingual children performed poorly on both tasks. We suspect that this group includes children at risk of language disorder and therefore they will be referred for further examination of language performance. Further analyses will compare performance of multilingual children with early and late AoA with performance of monolingual children on both quasi-universal and English language-specific NWR combined with SR.

On the basis of the preliminary results we can conclude that quasi-universal NWR is a promising screening tool for identifying children with language disorder in both multilingual and monolingual context. Combining NWR with SR provides more information on children's language performance relative to their language exposure. Combination of the two tasks could be used as a promising screening tool in disadvantaged schools with high language diversity to identify children at risk of language impairment.

16.00-16.30: Natalia Meir, Revital Bazes, Marissa Hartston and Rama Novogrodsky: Language and Theory of Mind abilities of bilingual children with High Functioning Autism

Little is known about the influence of bilingualism on linguistic skills and Theory of Mind (ToM) of children with Autism (Welterlin & LaRue, 2007; Yu, 2013). The present study explored language and ToM of bilingual children with High Functioning Autism (HFA), i.e. children with autism who exhibit intellectual profiles within the normal range and are able to acquire spoken language. Monolingual children with HFA show problems with Theory of Mind (ToM) (Baron-Cohen, Leslie, & Frith, 1985) and linguistic phenomena involving ToM and perspective taking, e.g., pronouns (Novogrodsky, 2013). As for linguistic abilities not involving ToM, e.g., morpho-syntax, previous findings for monolingual children with HFA show a mixed picture: some children with HFA have spare morpho-syntactic abilities, while others show deficits (Kjelgaard & Tager-Flusberg, 2001).

In the current study twenty bilingual children speaking L2-Hebrew aged 5-8 with HFA and with Typical Language Development (TLD) participated. HFA status was verified using the Autism Diagnostic Observation Schedule (ADOS; Lord et al., 1999). All children had non-verbal IQ scores within the norm (Raven, 1998).

Three Theory of Mind (ToM) tasks were administered: the Smarties unexpected content task (Perner et al. 1987), 1st order and 2nd order false-belief tasks (Buac & Kaushanskaya, 2017). Linguistic abilities were measured using two tasks. Linguistic skills implicating ToM and perspective taking were tested using a Pronoun Elicitation Task. Linguistic skills not involving ToM and perspective taking were tested using a Sentence Repetition task (SRep-30, a short version of the Hebrew LitMUS SRep, Meir, Walters, & Armon-Lotem, 2017).

The study confirmed ToM deficits for bilingual children with HFA. A developmental trend was found for the TLD group: preschoolers passed the Smarties task, and the majority of older children passed both false-belief tasks. On the Pronoun Elicitation Task, all children with HFA showed lower accuracy and different error patterns compared to the TLD group. On the SRep-30, children with HFA showed heterogeneous profiles. Some children showed intact morpho-syntactic abilities, while others scored in the bilingual-SLI range, exhibiting error patterns reported for bilingual children with SLI (Meir, Walters, & Armon-Lotem, 2017).

To conclude, bilingual children with HFA have a core ToM deficit and difficulties with linguistic phenomena involving listener's perspective, similarly to previous studies on monolingual children with HFA. As for morpho-syntax, bilingual children with HFA show heterogeneity. Some children show a comorbidity of HFA and SLI, while others show intact morpho-syntactic abilities, in line with previous studies on monolingual children with HFA. We suggest that bilingual children with HFA who show intact abilities in morpho-syntax provide further evidence that bilingualism does not have a negative effect on language skills of children with developmental disorders (e.g. SLI: Meir, 2017; Down Syndrome: Bird et al., 2005; William Syndrome: Perovic & Lochet, 2015).

16.30-17.00: Mada Alhassan and Theodoros Marinis: Developing a Sentence Repetition Task for children with and without Autism in Saudi Arabia

Background: Research on the language abilities of children with Autism Spectrum Disorders (ASD) has focused predominantly on pragmatics and prosody (McCann & Peppe, 2003; Tager-Flusberg, 1999), with a relatively small number of studies investigating morphosyntax (e.g., Roberts, et al., 2004; Perovic, et al., 2013). Most studies have addressed the acquisition of English, but although there is growing research on the acquisition of other languages, e.g., French (Prevost et al., 2017), Greek (Terzi, et al., 2014; Peristeri et al., 2017), Mandarin (Su et al., 2014; Zhou et al., 2015), no studies to date have investigated how Arabic speaking children with ASD acquire morpho-syntax. The present study fill this gap by investigating the acquisition of Arabic in children with ASD in Saudi Arabia. Given the growing importance and use of English in Saudi Arabia, a large number of Saudi children are bilingual. Therefore, the present study investigates Arabic in Arabic-English speaking children.

Methodology: Fifty-one 5-to-7-year-old Arabic-English bilingual school-aged children participated in the study: 40 TD children and 11 children with ASD (the data collection is ongoing to reach 20 by June). The children with ASD were diagnosed with autism in specialist clinics in Saudi Arabia. The TD children were

recruited from mainstream schools and did not have any history in speech or language difficulties. The two groups were planned to be matched on age, but since the data collection is not complete yet, in the current data the children with ASD are slightly older than their TD peers [Mean-age-ASD:78.64 months, SD:7.31; Mean-age-TD:70.57, SD:7.95; F(1,52)=9.260,p=0.004)]. For all analyses, age was used as a covariate. Participants completed Ravens Color Matrices as a baseline task and an Arabic Sentence Repetition Task (SRT) that was developed using the principles by Marinis & Armon-Lotem (2015) alongside other experimental tasks. The SRT is a computerized task in which children listen to 48 sentences in the Saudi dialect and have to repeat them verbatim. The SRT was scored using the scheme developed on the CELF and the TOLD to compare the two scoring schemes.

Results: The ASD children did not differ from the TD children in their non-verbal abilities (Ravens:F(1,52)=1.771,p>0.1). On the SRT, the children with ASD scored lower than the TD children in both scoring schemes (CELF scoring:F(1,52)=13.877,p<0.001; (TOLD scoring span:F(1,52)=12.307,p=0.001).

Conclusion: The data from the Arabic-speaking group with ASD show that they have deficits in morpho-syntax despite their similar non-verbal abilities to the TD group. This will be validated with a larger cohort of children before June 2018 and error patterns will be identified. We will discuss the task's usefulness for the identification of language impairment in Arabic-speaking children.

Poster presentations

Wednesday 27th June 2018

1. Aviva Soesman: Codeswitching as a Potential Indicator of Bilingual SLI: Lexical inaccuracies and Non-Elicited Codeswitching in a Sentence Repetition Task

While codeswitching (CS) is a widespread phenomenon in bilingual communities, few studies have examined CS among bilingual children with SLI. The data presented here are part of a larger study on CS as a potential marker of SLI in bilingual, preschool children. That study focuses on codeswitching in prepositional phrases, examining grammaticality, directionality and proficiency effects in a sentence repetition task. The present analyses addressed two types of errors which emerged from the sentence repetition task: lexically inaccurate codeswitches and non-elicited codeswitches (switches not present in the target sentence). We examined to what extent children with SLI produce more lexical errors and non-elicited codeswitches as compared to children with TLD and to what extent these phenomena relate to grammatical locus and directionality of the switches.

Participants were 65 English-Hebrew bilingual children with TLD and 13 with SLI, ages 5;5 – 6;10 (M = 5;11). Stimulus sentences contained six codeswitch conditions: (1) a codeswitched preposition (P), (2) a preposition switched together with the following determiner (P+DET), (3) a preposition switched together with the following determiner and noun (P+DET+N), (4) a codeswitched noun (N), (5) a noun switched together with the preceding determiner (DET+N), and (6) no switch. Stimuli were 36 English and 36 Hebrew sentences (+24 fillers) matched for semantic content and syntax. English sentences contained switches to Hebrew, and Hebrew sentences contained switches to English. English and Hebrew stimulus sentences were presented in separate sessions, one week apart. Children were instructed to repeat the sentences verbatim.

Findings indicate that in both languages children with SLI made more lexical errors when codeswitching as compared to children with TLD. Results also indicate that the SLI group had more non-elicited codeswitches. The results are discussed in terms of lexical-semantic skills and language control.

Example of inaccurate CS:

Target Sentence: The cat jumped me'al ha- chair again and again

'The cat jumped over the chair again and again'

Inaccurate CS: The cat jumped AFTER the chair again and again

Example of non-elicited CS:

Target Sentence: The man smiles axrey the story every time

'The man smiles after the story every time'

Non-elicited CS: The man smiles axrey the story KOL HA- ZMAN

'The man smiles after the story all the time'

2. Lina Ibrahim, István Fekete and Cornelia Hamann: Identification of Specific Language Impairment (SLI) in simultaneous and successive bilinguals by evaluating Sentence Repetition (SRT) and Nonword Repetition Tasks (NWRT) Using a Machine Learning Algorithm

Recent research in language impairment has focused on the problem of identifying SLI in bilinguals. This is particularly challenging since difficulties in the acquisition of second language (L2) or of two first languages (2L1) may concern the same linguistic structures as those difficult for monolingual children with SLI (MoSLI). As a result, bilingual children are often misdiagnosed as language impaired.

The main objective of this study is to evaluate the potential of the German-SRT (Hamann et al. 2013) and NWRT (Grimm et al. 2014) developed according to LITMUS principles (Language Impairment Testing in Multilingual Settings) as diagnostic tools for SLI in simultaneous and successive bilingual children with three different L1 backgrounds (Armon-Lotem & Meir 2015). We further investigate the potential impact of risk factors for SLI vs. exposure variables and language dominance on the discriminatory power of both tasks.

78 monolingual and bilingual typically developing and language impaired children aged 5;6-9;4 years participated in the study: 11 MoSLIs, 10 MoTDs, 11 BiSLIs and 45 BiTDs with Arabic/Turkish/Portuguese as L1.

We present a new exploratory multivariate method to establish an automatic classification of BiSLI versus BiTD children directly from the linguistic score matrices on both tasks combined without having access to their clinical diagnosis. For this purpose, we use a prominent unsupervised machine learning technique, the Partitioning Around Medoids method (PAM; Kaufman & Rousseeuw 2009), because it is insensitive to outliers and at the same time suitable for small datasets with around 60 objects. The goal of an unsupervised learning algorithm is to organize unlabeled data in some way to describe its internal structure and to unravel novel underlying patterns in the data. Importantly, in unsupervised learning, the algorithms learn the inherent structure from the input data.

Results indicate clusterability of the data into two compact and well-separated clusters in which the cases are similar to each other. Our premise is that the cluster with lower scores represents language impairment. In a next step, we perform Firth's Bias-Reduced Binary Logistic Regression (Firth 1993) analysis in order to test if any of the background information variables provided by the parental questionnaire (Tuller 2015) as cogent confounders can predict cluster membership as revealed by the PAM method. The latter include factors such as AoO to L2, LoE to L2, linguistic richness in and early exposure to L1 and L2, language-dominance, socio-economic-status and most importantly risk factors for SLI.

The analysis shows that cluster membership of cases cannot be predicted by any of the covariates such as age or exposure variables. Subsequent recursive feature elimination ranked all possible variables and found that no-risk-index is the most important variable that cuts across the cluster boundary if both clinical and non-clinical populations are included in clustering.

3. Vicky Chondrogianni, Morna Butcher, Maria Garraffa and Thomas Bak: Developing language assessments for primary school children with and without Developmental Language Disorder in Gaelic-medium education

While bilingual education is generally valued by teachers and parents due to the cognitive and sociocultural benefits that it brings (e.g. Bialystok, 2016), concerns arise when it comes to children with or at risk of Developmental Language Disorder (DLD) (Bishop et al., 2017), as it is feared that the language learning difficulties in their first language (L1) will be exacerbated when learning a second language (L2) (e.g. Wight,

2015). This issue becomes particularly complex in the context of minority immersion bilingual education, where pupils have a mixed profile; they may be native speakers of the minority language and entrench their L1 knowledge though literacy and formal instruction. Or, they may come from L1 majority homes who are immersed in a minority L2, receiving primarily L2 input in the school context. To provide equitable educational and clinical provision for these children, it is important that minority language immersion bilingual programmes offer assessment and support in both languages spoken by the (emergent) bilingual child (Genesee et al., 2011). The present study aimed to address this issue by developing, for the first time, assessment material in Scottish Gaelic for pupils attending Gaelic-medium schools in Scotland and by testing children in both English and Gaelic.

Data collection for the present project is currently underway, and, therefore, we focus here on the study design and analysis. A group of children with typical development and with/or at risk of DLD participate in the current study. All children attend P2 and P3 in Gaelic-medium schools (6-to-8-year-olds) in two urban and one rural location in Scotland and are either from Gaelic- or English-speaking homes. To assess their language abilities in Gaelic, we adapted the cross-linguistic lexical task (Haman et al., 2015), the sentence repetition task (Marinis & Armon-Lotem, 2015), the narrative task (Gagarina et al., 2015), as well as the Parental Bilingual Questionnaire (Tuller, 2015) developed during the COST Action IS0804 (Armon-Lotem et al., 2015) to capture Gaelic-specific linguistic structures and educational particularities. We use a combination of standardised English tasks and COST Action tasks to measure their English language abilities.

For the overall analysis, we will use mixed-effects regression models (linear and logistic depending on the dependent variable) with language background (Gaelic- or English-dominant), impairment status (DLD, TD) and age as fixed effects and child and item intercepts and slopes, where appropriate, as random effects. In the present paper, we will highlight the areas of Gaelic that may be challenging for TD and DLD children in immersion education programmes. Finally, we will discuss the opportunities and challenges involved in the development of language material for a minority language undergoing revitalisation through education.

4. Ingrid Vangen, Camilla Bome and Jan de Jong: The development and pilot of a Norwegian adaption to the Language Impairment Testing in a Multilingual Setting (LITMUS) Sentence Repetition tasks

The demographic changes in Europe in the last three decades have led to an increase in the number of bilingual children (Armon-Lotem & de Jong, 2015). As these children have a different cultural background and a different first language (L1) they are often perceived as more challenging to assess. Uncertainty on diagnosis is also attached to the available assessment tools and how they can be adapted. Such an adaptation is what the authors would like to present.

Various studies have revealed overlapping profiles between the linguistic manifestations of (typical) second language (L2) acquisition and Specific Language Impairment (SLI). Therefore, the need for appropriate assessment tools for identifying SLI in bilingual children is substantial, and the LITMUS Sentence Repetition (SRep) task has proven to be a good psycholinguistic marker of SLI (Armon-Lotem, de Jong, & Meir, 2015). Language Impairment Testing in a Multilingual Setting (LITMUS) is a test battery consisting of various tasks that are comparable in various languages (Marinis & Armon-Lotem, 2015). We have developed a Norwegian SRep task with the intention of contributing to this test battery. We will present how this task was developed emphasizing the role of increasing complexity in sentences, operationalized by movement and embedding. An additional challenge was to define language-specific features for Norwegian.

We will present a pilot study with 62 participants from 1st grade (6:2-7:1) and 2nd grade (7:0-8:0) with Norwegian as their L1. The results showed a good internal consistency and strong inter-rater reliability for the task. There was a significant difference between the age groups: the children in 2nd grade had a higher performance than the children in 1st grade. This indicates that the task can differentiate between developmental stages further implying that the task can identify SLI as well.

In order to investigate the role of short term memory and working memory, a digit span (DS) subtest from Clinical Evaluation of Language Fundamentals (CELF) 4 was conducted (Semel, Wiig, & Secord, 2004). When comparing performance on the SRep task and DS test, we found a correlation between the two, indicating that memory plays a role. The implications of this correlation will be discussed.

Plans for further investigations of error types, as well as the gathering of pilot data on bilingual children and children with SLI will also be discussed.

5. Petra Schulz, Angela Grimm and Rabea Lemmer: Are grammatical constraints vulnerable in children with Bi-SLI? Evidence from finiteness marking in German

In Germanic languages like German, only finite verbs are licensed in verb-second position (V2). Overtly marked non-finite forms such as en-infinitives (spiel-en,'play') and bare forms (spiel- Ø) are not licensed in V2 (Holmberg, 2015). This paper investigates whether early second language learners of German (eL2) with SLI in the course of their morpho-syntactic development produce structures that violate this central grammatical constraint in German. If this ban on non-finite forms in V2 is vulnerable in bilingual SLI, but not in typical development (TD), this could help identifying SLI in bilingual children. Evidence to date is mixed: studies have analyzed bare forms together with en-infinitives or excluded them, and V2 and Vf clauses were not always differentiated (e.g.Rothweiler et al., 2012). Using a longitudinal design we asked: (Q1a) Which verb forms do eL2-TD and eL2-SLI children use in V2? (Q1b) Do they distinguish between en-infinitives and bare forms regarding verb placement? (Q2) Do eL2-children with SLI differ from their eL2-TD peers in their morpho-syntactic behavior?

Elicited production data were collected in four test-rounds from 22 eL2-TD learners of German with different L1's (Age at T1=3;7, AoO=2;10 years) and from 11 eL2-SLI children (Age at T1=7;1, AoO=3;3 years). The SLI-children fulfilled standard exclusion criteria and performed below 1SD in >=2/9 subtests of a language-test with eL2-norms. The age range for the TD- and the SLI-group ensured that main clauses were likely to be produced. The task contained 13 prompts targeting main clauses. 642 main clauses with a lexical main verb were analyzed (Table_1). In V2-clauses, from T1 onwards both learner-groups used no substitutions and very few en-infinitives; bare forms were the most frequent error types (Fig.1a/b) (Q1a). In non-adult Vf main clauses, both learner-groups frequently used en-infinitives, and only rarely other forms (Fig. 2a/b). In both groups en-infinitives were sig. more frequent in Vf than in V2; and bare forms were sig. more frequent in V2 than in Vf (all p's<.000, Fisher's Exact) (Q1b). Regarding (Q2), the occurrence of en-infinitives and bare forms in V2 and Vf did not differ between eL2-TD and eL2-SLI children (p=.1465, Fisher's Exact) (Table_1). As bare forms patterned with finite verbs and not with en-infinitives, we propose that they are underlyingly finite for both learner-groups. Unlike eL2-TD children, who realized target-like inflection in V2 in 90% of the main clauses already at 4;7, the eL2 SLI-group mastered this step only at 8;11.

We conclude that a) the ban on non-finite forms in V2 is invulnerable in eL2-SLI, as in eL2-TD, and b) morpho-syntactic SLI in eL2-children should be identified not by occurrence of deviant forms but by delay: if at age 6 or older eL2-children produce non-target bare forms in V2 then this may indicate SLI.

6. Daniela Gatt, Ylenia Passiatore and Sabine Pirchio: Profiling the vocabularies of European migrant children attending preschool in a bilingual and a monolingual country using LITMUS-CLT: methodological considerations and preliminary outcomes

The phenomenon of European nationals migrating to another country in Europe has become widespread in recent years. This has resulted in growing numbers of European migrant children whose home language differs from that of the population at large. The methodology reported here was designed to investigate whether the broader context's status as bilingual or monolingual influenced children's receptive and expressive vocabulary skills in the second language (L2) and, in a bilingual setting, in the third language (L3). Our ultimate goal was to direct our findings towards supporting the identification of language difficulties among migrant children prior to the commencement of primary schooling. We chose to focus on children attending preschool in Malta and in central Italy. The former is recognised as a bilingual country, whereas the central Italian region of Lazio is distinctly monolingual. Limiting the study to European migrant children enhanced the cultural homogeneity of the sample. In this presentation we describe the methodology employed, considerations it flagged up and data excerpts.

For both countries, participant selection required exposure to a home language other than that/those officially spoken by the native population. Target age groups were 3;0-3;4 and 4;0-4;4 years. Methods of data collection were parent and teacher report, direct assessment and language sampling. Parents were asked to report on their children's early language development, language exposure and proficiency, using an adaptation of the

Questionnaire for Parents of Bilingual Children (PaBiQ) (COST Action IS0804, 2011). Another questionnaire was given to participants' teachers, to gather information on the children's language use, proficiency and exposure as observed in class. Children attending school in Malta were tested on the Maltese and English LITMUS Cross-Linguistic Lexical Tasks (CLT), in order to measure their understanding and production of nouns and verbs in L2 and L3, while those in Italy were tested on the Italian CLT, providing insight on L2 lexical skills. Each child's spontaneous vocabulary production was sampled during 10-15 minutes of one-to-one interaction with his/her teacher.

Preliminary analysis of collected data revealed that, despite the specific selection criteria, sources of variability were still noticeable among the recruited children. Some participants were exposed to English/Italian in varying amounts at home, besides their home language. This was then reflected in their lexical performance during assessment. Parental occupation and education level also varied widely across participants, bearing an influence on the language input provided and children's subsequent uptake of vocabulary. We present data from individual children to illustrate these circumstances. The resulting implication is twofold: from a methodological perspective, more stringent criteria should be employed for participant selection so that variability is controlled as far as possible; from a clinical perspective, a careful consideration of the sources of variability might help to correctly identify language difficulties.

7. Atalia Hai Weiss: Naming Errors among Hebrew-English Bilingual Preschool Children

It is often reported that bilingual children have smaller lexicons than their age-mates (Thordardotir, 2011). In the current study, we examined whether these deficits can be related to difficulties with retrieval from long-term lexical memory. More specifically, we inspected naming errors and their semantic relations to their targets of English-Hebrew bilingual preschool children. Up to now, data have been collected from 19 children (mean age 5;3 years) from families of high SES, exposed to English from birth and to Hebrew prior to 36mo. Parents responded to a detailed background questionnaire (BIPAQ) regarding developmental milestones, as well as exposure to and use of the two languages (Abutbul-Oz, Armon-Lotem & Walters, 2012). Children in the present cohort were all typically developing with no reported concerns about language development. On average, mothers reported speaking English with their child most of the time (about 91%), but children speak English with their mothers only about 68% of the time. In two separate sessions, each child was administered a standardized expressive vocabulary test in Hebrew (Shemesh, Friedmann & Biran, 2004) and in English (EOWPVT, Brownell, 2010). The average score obtained in Hebrew (74.21%) was considerably lower than the average for monolingual children their age (-2.5 SD). Although five children refused to perform the English naming test, the average standard score of the other 14 children was almost within the norm of monolingual English speaking children (M=83, -1 SD). Naming errors were coded for 'non related', 'phonological', 'circumlocutions', 'semantic', 'no response' and 'code switching'. For the 14 children, 'no response' appeared to the same degree in both languages. However, 'code switching' appeared more in English than in Hebrew (e.g., 'ananim' instead of 'clouds'), but more 'circumlocutions' appeared in Hebrew (e.g., 'something that you play on' for 'trumpet'). Importantly, there were significantly more 'semantic' mistakes in English than in Hebrew (e.g., 'tree' instead of 'cactus'). The amount of use of English when talking with mother correlated negatively to 'no responses' in English, but correlated positively with the frequency of 'semantics' errors in English. In other words, the more the child speaks English with his mother, the more she/he attempted some response; however, some of these were not fully correct but were semantically related (e.g. 'animals' for 'bugs'). The findings are discussed in terms of the "weaker links" hypothesis (Gollan, Montoya, Cera, & Sandoval, 2008) which suggests the influence of "frequency effects" on retrieval among bilinguals, since frequency-of-use is divided between two languages. Further data will be collected from bilingual children with SLI in order to clarify the difference between naming deficits and type of errors among bilingual children with typical development and those with developmental lexical retrieval deficits (Friedmann, Biran, & Dotan, 2011).

Thursday 28th June 2018

1. Rima Haddad, Linnea Öberg and Ute Bohnacker: Exploring the lexical abilities and language exposure patterns of Arabic-Swedish bilingual children (4-7) in Sweden

Children growing up bilingually are exposed to two languages; as a result, the amount of exposure to each of the languages is generally smaller than the amount of language exposure that a monolingual child receives. This may lead to a smaller lexicon in one or both of a bilingual child's languages (Bialystok et al., 2010). Furthermore, language exposure patterns affected by certain environmental factors, socio-economic status and age effects, may further impact the development of a bilingual child's lexical ability. These numerous factors contribute in making the bilingual population a considerably heterogeneous entity. For example, in one study, the average weekly exposure of bilingual children to the majority language ranged between 8% and 93% (Unsworth, 2013). Not taking these factors into consideration might lead to an unjust assessment of the child's vocabulary skills and as a result the risk of falsely diagnosing the child with language impairment (LI). Children who do have LI, however, have often shown a slower rate of vocabulary growth and an overall delay in their language development. Moreover, the LI children's lexicon is believed to be less diverse than that of same-age peers. (Leonard & Deevy, 2004). However, prior attempting to disentangle the lexical characteristics of LI from those of bilingualism, it is vital to identify what is typical and atypical in the language traits of TD bilingual children whilst taking into consideration the language exposure patterns.

In today's Sweden, Arabic ranks amongst the most spoken minority languages. Since the language characteristics of bilingual children have not been fully explored, Arabic-Swedish speaking children have a risk of being falsely over-diagnosed with LI.

In our talk, we will present some ongoing work on the lexical knowledge of Arabic-Swedish speaking children (4-7) in Sweden. The presented results are from our joint PhD research (n≈100), which is a part of the larger BiLI-TAS project (Bohnacker 2014-2019) at Uppsala University. The LITMUS Cross-linguistic Lexical Tasks (CLT), (Haman, Luniewska, & Pomiechowska, 2015) is used to measure lexical ability (vocabulary size). CLT is a picture-based vocabulary task that assesses the bilingual child's comprehension and production of nouns and verbs, allowing a comparison between lexical abilities in both of their languages. Furthermore, we investigate language exposure patterns and age effects in children's lexical performance (CLT score results), using background information from parental questionnaires. Our aim is to collect and analyze reference data from a large group of Arabic-Swedish bilingual TD children, in order to identify what typical language development looks like, and to be able to tease apart the lexical characteristics of bilingualism from language impairment.

2. Ooi Carmen Chia-Wen: Cantonese relative clause comprehension and phonological short-term memory in children with SLI

Children with Specific Language Impairment (SLI) have difficulties with the comprehension of relative clauses (RCs). The literature offers three explanations to these difficulties: a) a deficit in the computation system for syntax movement and thematic role assignment, b) failure to detect regularities of the RC structure from the ambient language, and c) a deficit in phonological short-term memory (pSTM). This study examined the relationship between pSTM and the comprehension of RCs in Cantonese-speaking children with SLI through three studies: 1) an investigation on children's pSTM capacity, via tasks that specifically tapped on the serial order or the item information pSTM, 2) an examination of children's comprehension of RCs using a picture-sentence matching task, 3) an investigation of the involvement of pSTM in the comprehension of RCs using a Change Detection task, which measured children's ability to remember details of RCs without the influence of speech motor output. Each of these studies was further divided into two parts, Part 1 described the performance of fifty children with normal language development, aged between 3;10 and 6;01, and Part 2 described the performance of 18 children with SLI, aged between 4;0 and 6;01.

Results showed that none of explanations in the literature adequately describe the RC comprehension pattern observed in the current study. The pSTM measures were developmental sensitive in children with normal language development. These children showed an advantage in the comprehension of subject RCs, and their performance in the comprehension of Subj-RCs was correlated with children's serial order pSTM. Children who did not comprehend RCs, they interpreted the Subj-RCs and the Obj-RCs using the same strategy:- all

RCs had a SVO canonical word order and that the first heard argument was the target response. Adoption of these comprehension strategies was not a result of difficulties in retaining details of RCs, such as the order of words within the phrase.

Children with SLI were found to have a deficit in pSTM. Yet this deficit in pSTM was not related to their performance in the comprehension of RCs. Children with SLI appeared to adopt the same strategies as their age peers with normal in the interpretation of Subj-RCs and Obj-RCs. Although, children with SLI were observed to have more difficulties in recalling details of the RCs than the age-matched children with normal language, there was no correlation between this difficulty and the comprehension of RCs. Instead they had difficulties in understanding the syntax relation of RCs. Findings of this study have implications for clinical intervention. It was suggested that language therapy should focus on linguistic processing instead of reduction on memory load.

3. Manish Madappa: Identifying Children with Specific Language Impairment Using LITMUS-MAIN-A Study of Kannada- English Bilinguals in India.

Bi/Multilingualism in speech communities across the country has become one of the most distinguishing features of the Indian society (Agnihotri, 1997). In a country like India the question of early identification of language disorders is compounded with such multitude of diversities in language. The absence of any procedural outlays in India for children with delayed and deviant language development compounded by the passivity of governments towards impaired population brings to fore the need early identification and intervention.

Linguistic problems manifest themselves across languages and are language independent (Leonard,1998). Contemporarily, it can be understood that children with delayed development of language compared to normally developing children may be displaying Specific Language Impairment, which can manifest as a deficient language in one or more aspects of language

The present study looks at 31 school aged (7-9) successive progressive Kannada(L1)-English (L2) bilinguals L1 on their narrative ability and comprehension using tasks advanced within the COST Action IS0804 "LITMUS-MAIN" tasks for English (Gagarina et al., 2012) and adapted into Kannada by the author.

A Z-score value of 1.5 below SD is taken as the locus in identifying a child at risk of language impairment reflected in both their L1 and L2 scores.

The results on the core components (macrostructure and Initial State Terms) identifies four participants Tani, Sama, Bhoo and Gane with Z scores of -1.42, -1.27, -1.27 and -1.27 respectively fall under the reference point of -1.25 points below for L1 (Kannada) and three participants Tani, Gane and Adhi with scores of -1.73, -1.58 and -1.13(relatively close to -1.25) respectively forming the outlier population for English (L2).

The scores that the most commonly used components are outcomes, produced in 86.02% (Kannada) and 79% (English) for all contexts and for all stories. The next commonly used component in the narrative is attempts with 70.43% produced in Kannada and 69.35% in English. The least produced component is goal which is produced at 45.43% and 31.72% in Kannada and English respectively. Even though the percentages of production of story structure components in L1(Kannada) is comparable to percentage of production in L2(English), there is a huge difference in the percentage of production of goals when compared to attempts and outcomes. In Kannada the percentage of production of goal is almost less than 25% when compared to attempts and almost 41% less when compared to outcomes.

Similarly, in English too, the production of goal is less than 38% of attempts and 48% lesser than scores for production of outcomes.

The present research intends to describe the language symptoms in non-English speaking population which can lead up to a wider and more variable corpus of data in explaining language impairment.

4. Marie Schnieders and Lina Abed Ibrahim: A Longitudinal Case Study on the Applicability of the German LITMUS-Sentence Repetition Task (SRT) and Non-Word Repetition Task (NWRT) to Late Successive Bilinguals

Current research on language disorders has focused on disentangling typical language development (TD) from Specific Language Impairment (SLI) in monolingual and bilingual contexts. Several studies have recently shown that nonword and sentence repetition tasks constructed according to the LITMUS (Language Impairment Testing in Multilingual Settings) principles can reliably identify SLI in both monolingual and bilingual children with different L1-L2 combinations (with an LoE > 24 months (Armon-Lotem & Meir 2016 for Russian/Hebrew bilinguals, de Almeida et al. 2017 for Arabic/French, Portuguese/French and Turkish/French bilinguals, Hamann & Abed Ibrahim 2017 for Arabic/German, Portuguese/German and Turkish/German bilinguals). However, unlike nonword repetition, sentence repetition relies on prior lexical and morphosyntactic knowledge of the L2 and requires sufficient exposure to the L2. This raises the question whether an SRT in the majority language is applicable to late successive bilinguals with considerably less L2-exposure (Marinis & Armon-Lotem 2015).

This longitudinal pilot case study examines the diagnostic accuracy of the German LITMUS- NWRT (Grimm et al. 2014) and LITMUS-SRT (Hamann et al. 2013) with four late successive Arabic-German bilinguals aged 7;0-9;4 at three different testing points (Length of exposure (LoE) at T1: 12 mo., T2: 18 mo., T3: 27 mo.). The performance of the aforementioned children is compared to monolingual controls with (MoSLI, N=3) and without language impairment (MoTD, N=3) as well as to early successive bilingual Arabic-German children with typical language development (N=3). For the German LITMUS-SRT, both scoring methods 'identical repetition' and 'target structure met', which compensate for L2 errors are applied.

In accordance with previous studies (e. g. Thordardottir & Brandeker 2013 for English/French bilinguals and Hamann & Abed Ibrahim 2017), LITMUS-NWRT, especially the language independent part, appears not to be influenced by LoE or L2 language dominance and can reliably differentiate between TD and SLI in bilingual children with only 12 months of exposure to the L2. SRT, on the other hand, showed poor specificity (proportion of typically developing children identifies as such by the task) at T1 and even at T2 using either scoring method. Only at T3 (LOE= 27 mo.) were the late successive bilinguals not over-identified as having SLI by the task. A qualitative analysis of error patterns showed that unlike MoSLI controls, who struggled with complex structures involving embedding, Wh-movement and intervention, late BiTDs were able to embed from T2 onwards but still demonstrated very high rates of gender and case errors. This rendered the targeted structure not met in certain constructions, e.g. RCs, Object wh-questions and topicalization, since case marking is crucial for the realization of the latter structures. These findings stress the importance of using a combination of tasks to assess late successive bilinguals with little exposure to the majority language.

5. Anna-Lena Scherger: Comparing indicators for SLI in bilingual contexts in German 7-year-old children using LITMUS tasks

A previous study on specific language impairment (SLI) in bilingual German children has identified case marking as a potential indicator for this disorder (Scherger 2015, Scherger submitted, Scherger in prep.). However, results also showed that case marking per se is not helpful in disentangling effects of impairment from those of bilingualism in each case. Its potential power as an indicator in German depends on the specific case (accusative ≠ dative), the child´s age and the age of onset of German (see Figure 1).

In the light of these results, a subsequent study shall contribute to the question of identification of SLI in bilingual contexts by comparing different indicators for one specific age (the age of 7). In recent research literature, different markers are discussed, among them case marking (Ruigendijk 2015; Scherger 2015; Schwarze 2016), subject-verb-agreement (SVA, de Jong 2015; Rothweiler et al. 2017; Schulz et al. 2017; Schulz & Schwarze 2017), non-word repetition (Thordardottir & Brandeker 2013; Chiat 2015; dos Santos & Ferré 2016; Abed Ibrahim & Hamann 2017; Hamann & Abed Ibrahim 2017; Grimm & Hübner to appear) and the digit span (Ziethe et al. 2013; Blom & Boerma 2017). The European Cooperation in Science and Technology (COST) Action IS0804 'Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment' developed several LITMUS (Language Impairment Testing in Multilingual Settings) tasks on these markers. However, not all of them have been tested for German sufficiently yet (Ruigendijk

2015 for case marking; de Jong 2015 for SVA; Grimm & Hübner to appear for NWR). The present study therefore com-pares these LITMUS tasks to each other and to the digit span (WISC-V, Petermann 2017).

The present pilot study investigates the performance of German bilingual children with typical language development (BiTD, N=5) and bilingual children with SLI (BiSLI, N=5) in a non-word repetition, a case marking and a SVA task. Furthermore, these children´s ability to recall digits forwards and backwards is tested. In line with Abed Ibrahim et al. (to appear), the LITMUS tools are opposed to results of other standardized tests in order to study their diagnostic accuracy in bilingual population. Besides a detailed parent questionnaire (Tuller 2015), we use the assessment tools Linguistische Sprachstandserhebung – Deutsch als Zweitsprache (LiSeDaZ, Schulz & Tracy 2011) and the Wortschatz- und Wortfindungstest für 6- bis 10-Jährige (WWT 6-10, Glück 2011). In order to exclude language delay caused by low intel-ligence, we conduct the non-verbal intelligence test Coloured Progressive Matrices (CPM, Bulheller & Häcker 2002).

Preliminary results are discussed with respect to previous research on these phenomena as well as to the acceptability of sensitivity levels for each of the LITMUS tasks.

6. Mariam Komeili, Theodoros Marinis, Parvaneh Tavakoli and Yalda Kazemi: The relationship between internal and external factors on a Farsi-English Sentence Repetition task for Bilingual children

Background: Typically Developing (TD) bilingual children often have a similar profile to monolingual children with Specific Language Impairment (SLI) (Armon- Lotem, 2012). Consequently, it is difficult to accurately discriminate between TD bilingual children and bilingual children with SLI. More effective results would be obtained by comparing bilinguals to bilinguals rather than bilinguals to monolinguals (Paradis, Shneider and Duncan, 2013). There continues to be a shortage of assessments for the heritage language of children who have English as a Second Language, especially for Middle Eastern languages, e.g., Farsi. Sentence Repetition (SR) tasks are effective diagnostic markers (Dollaghan and Horner, 2011). Therefore, this study aimed to create a Farsi SR assessment which is sensitive enough to discriminate between TD and SLI Farsi-English children. Bilingual children's performance on SR tasks has been shown to be influenced both by external (parent's education/occupation, family size, socio economic status etc.) and internal factors (chronological age, age of onset, length of exposure, etc) but internal factors are more highly correlated to performance (Armon Lotem, Walters and Gargania, 2011). The Farsi-SR task was created based on the following principles (Marinis and Armon-Lotem, 2015):

1. Include syntactically complex structures that are difficult for children with SLI across languages and involve embedding and/or syntactic movement along with syntactically simple structures as control structures (language independent structures);

2. Include structures in the specific language that are difficult for children with SLI (language specific structures).

In this study, the independent structures were mainly syntactic while the specific structures were mainly morphological.

Research questions: The study addressed the following questions: 1) are there differences between the independent/syntactic and specific/morphological structures, and 2) are internal factors, i.e., Age, Age of Onset (AoO) to Farsi and use of Farsi related to the children's performance on the SR task.

Participants: 20 TD Farsi-English bilingual children between the ages of 6-11 (M= 106 months and SD = 24.023 months) were recruited from Farsi schools in Toronto.

Results: The children performed significantly less well on the independent/syntactic (M=69.17, SD= 17.77) vs. the specific/morphological structures (M=82.86, SD= 15.95) t(19) = -7.328, p=0.000. There was a significant correlation between the children's Age and their SR score r(18) = 0.589, p<0.01 as well as their use of Farsi and their SR score r (18)=0.51, p<0.05 but there was no correlation with AoO.

Conclusion: The children's lower score on the language independent/syntactic structures indicate that complex syntactic structures that involve embedding and/or syntactic movement are acquired later than morphological structures. The correlations with Age and use of Farsi demonstrate the importance of internal factors for language development. These results together provide support for the Farsi SR task as a promising diagnostic tool for children with Farsi as heritage language worldwide.

Alternates

1. Aviva Soesman: Codeswitching as a Potential Indicator of Bilingual SLI: Lexical inaccuracies and Non-Elicited Codeswitching in a Sentence Repetition Task

While codeswitching (CS) is a widespread phenomenon in bilingual communities, few studies have examined CS among bilingual children with SLI. The data presented here are part of a larger study on CS as a potential marker of SLI in bilingual, preschool children. That study focuses on codeswitching in prepositional phrases, examining grammaticality, directionality and proficiency effects in a sentence repetition task. The present analyses addressed two types of errors which emerged from the sentence repetition task: lexically inaccurate codeswitches and non-elicited codeswitches (switches not present in the target sentence). We examined to what extent children with SLI produce more lexical errors and non-elicited codeswitches as compared to children with TLD and to what extent these phenomena relate to grammatical locus and directionality of the switches.

Participants were 65 English-Hebrew bilingual children with TLD and 13 with SLI, ages 5;5 – 6;10 (M = 5;11). Stimulus sentences contained six codeswitch conditions: (1) a codeswitched preposition (P), (2) a preposition switched together with the following determiner (P+DET), (3) a preposition switched together with the following determiner and noun (P+DET+N), (4) a codeswitched noun (N), (5) a noun switched together with the preceding determiner (DET+N), and (6) no switch. Stimuli were 36 English and 36 Hebrew sentences (+24 fillers) matched for semantic content and syntax. English sentences contained switches to Hebrew, and Hebrew sentences contained switches to English. English and Hebrew stimulus sentences were presented in separate sessions, one week apart. Children were instructed to repeat the sentences verbatim.

Findings indicate that in both languages children with SLI made more lexical errors when codeswitching as compared to children with TLD. Results also indicate that the SLI group had more non-elicited codeswitches. The results are discussed in terms of lexical-semantic skills and language control.

Example of inaccurate CS:

Target Sentence: The cat jumped me'al ha- chair again and again

'The cat jumped over the chair again and again'

Inaccurate CS: The cat jumped AFTER the chair again and again

Example of non-elicited CS:

Target Sentence: The man smiles axrey the story every time

'The man smiles after the story every time'

Non-elicited CS: The man smiles axrey the story KOL HA- ZMAN

'The man smiles after the story all the time'

2. Lina Ibrahim, István Fekete and Cornelia Hamann: Identification of Specific Language Impairment (SLI) in simultaneous and successive bilinguals by evaluating Sentence Repetition (SRT) and Nonword Repetition Tasks (NWRT) Using a Machine Learning Algorithm

Recent research in language impairment has focused on the problem of identifying SLI in bilinguals. This is particularly challenging since difficulties in the acquisition of second language (L2) or of two first languages (2L1) may concern the same linguistic structures as those difficult for monolingual children with SLI (MoSLI). As a result, bilingual children are often misdiagnosed as language impaired.

The main objective of this study is to evaluate the potential of the German-SRT (Hamann et al. 2013) and NWRT (Grimm et al. 2014) developed according to LITMUS principles (Language Impairment Testing in Multilingual Settings) as diagnostic tools for SLI in simultaneous and successive bilingual children with three

different L1 backgrounds (Armon-Lotem & Meir 2015). We further investigate the potential impact of risk factors for SLI vs. exposure variables and language dominance on the discriminatory power of both tasks.

78 monolingual and bilingual typically developing and language impaired children aged 5;6-9;4 years participated in the study: 11 MoSLIs, 10 MoTDs, 11 BiSLIs and 45 BiTDs with Arabic/Turkish/Portuguese as L1.

We present a new exploratory multivariate method to establish an automatic classification of BiSLI versus BiTD children directly from the linguistic score matrices on both tasks combined without having access to their clinical diagnosis. For this purpose, we use a prominent unsupervised machine learning technique, the Partitioning Around Medoids method (PAM; Kaufman & Rousseeuw 2009), because it is insensitive to outliers and at the same time suitable for small datasets with around 60 objects. The goal of an unsupervised learning algorithm is to organize unlabeled data in some way to describe its internal structure and to unravel novel underlying patterns in the data. Importantly, in unsupervised learning, the algorithms learn the inherent structure from the input data.

Results indicate clusterability of the data into two compact and well-separated clusters in which the cases are similar to each other. Our premise is that the cluster with lower scores represents language impairment. In a next step, we perform Firth's Bias-Reduced Binary Logistic Regression (Firth 1993) analysis in order to test if any of the background information variables provided by the parental questionnaire (Tuller 2015) as cogent confounders can predict cluster membership as revealed by the PAM method. The latter include factors such as AoO to L2, LoE to L2, linguistic richness in and early exposure to L1 and L2, language-dominance, socio-economic-status and most importantly risk factors for SLI.

The analysis shows that cluster membership of cases cannot be predicted by any of the covariates such as age or exposure variables. Subsequent recursive feature elimination ranked all possible variables and found that no-risk-index is the most important variable that cuts across the cluster boundary if both clinical and non-clinical populations are included in clustering.

3. Vicky Chondrogianni, Morna Butcher, Maria Garraffa and Thomas Bak: Developing language assessments for primary school children with and without Developmental Language Disorder in Gaelic-medium education

While bilingual education is generally valued by teachers and parents due to the cognitive and sociocultural benefits that it brings (e.g. Bialystok, 2016), concerns arise when it comes to children with or at risk of Developmental Language Disorder (DLD) (Bishop et al., 2017), as it is feared that the language learning difficulties in their first language (L1) will be exacerbated when learning a second language (L2) (e.g. Wight, 2015). This issue becomes particularly complex in the context of minority immersion bilingual education, where pupils have a mixed profile; they may be native speakers of the minority language and entrench their L1 knowledge though literacy and formal instruction. Or, they may come from L1 majority homes who are immersed in a minority L2, receiving primarily L2 input in the school context. To provide equitable educational and clinical provision for these children, it is important that minority language immersion bilingual programmes offer assessment and support in both languages spoken by the (emergent) bilingual child (Genesee et al., 2011). The present study aimed to address this issue by developing, for the first time, assessment material in Scottish Gaelic for pupils attending Gaelic-medium schools in Scotland and by testing children in both English and Gaelic.

Data collection for the present project is currently underway, and, therefore, we focus here on the study design and analysis. A group of children with typical development and with/or at risk of DLD participate in the current study. All children attend P2 and P3 in Gaelic-medium schools (6-to-8-year-olds) in two urban and one rural location in Scotland and are either from Gaelic- or English-speaking homes. To assess their language abilities in Gaelic, we adapted the cross-linguistic lexical task (Haman et al., 2015), the sentence repetition task (Marinis & Armon-Lotem, 2015), the narrative task (Gagarina et al., 2015), as well as the Parental Bilingual Questionnaire (Tuller, 2015) developed during the COST Action IS0804 (Armon-Lotem et al., 2015) to capture Gaelic-specific linguistic structures and educational particularities. We use a combination of standardised English tasks and COST Action tasks to measure their English language abilities.

For the overall analysis, we will use mixed-effects regression models (linear and logistic depending on the dependent variable) with language background (Gaelic- or English-dominant), impairment status (DLD, TD) and age as fixed effects and child and item intercepts and slopes, where appropriate, as random effects. In the present paper, we will highlight the areas of Gaelic that may be challenging for TD and DLD children in immersion education programmes. Finally, we will discuss the opportunities and challenges involved in the development of language material for a minority language undergoing revitalisation through education.

Knowledge Transfer Workshop for Speech & Language Therapists

Several waves of migration have led to an increase in the number of children worldwide who start (pre)school in a language that is not their home language. While teachers can often tell that a monolingual child's language is not as expected for her age and speech and language therapists can successfully identify language impairment in monolingual children, this is far from obvious when the language they evaluate is the child's second language. The identification of language impairment in bilingual children poses a challenge for speech & language therapists, especially if they do not speak the child's home language. Another important challenge regards the remediation of bilingual children with developmental language disorders. What intervention models are suitable for bilingual children to support their language and literacy development? What adaptations do we need to make to intervention programmes that have been developed for monolingual children?

This day workshop will address interventions for children with DLD and ASD. It will include a session on Narrative Based Language Interventions for Bilingual Children with DLD by Prof Lisa Bedore (University of Philadelphia) and a session on a Language Intervention for children with ASD using Shakespeare by Ms Theodora Read (University of Reading).

10.00-12.30 Lisa Bedore: Narrative Based Language Interventions for Bilingual Children with DLD: Fostering Growth in Two Languages

Bilingual children with developmental language disorders show the greatest gains when interventions support their home and school languages. Supporting the home language provides a foundation for the development of English as an additional language. In this session, we will explore how a book based narrative intervention can be used with bilingual children with developmental language disorders. We will begin by reviewing a bilingual language intervention model (Peña, Bedore, and Lugo-Neris, 2017) that identified the key ingredients necessary to support language and literacy development. Several studies illustrate the utility of an approach based on this. Of special interest, we have explored how matching the language of reading instruction (often English) results in changes to language skills. In the second half of the session we will view videos of the intervention techniques and using example of key activities develop intervention activities that can be used in local school and clinic settings.

13:30-15:00 Theodora Read: Using Shakespeare in a Language Intervention for children with ASD

There are a number of different approaches to developing social skills in young people with Autism Spectrum Disorder. The use of role play and drama has been shown to facilitate social development in neuro-typical children and children with ASD (Mehling, Tasse, & Root 2016). In this session we will explore some elements of the Shakespeare's Heartbeat programme (Hunter 2014). This approach uses structured games with interaction between different characters from The Tempest. It enables participants to focus on moments in which thoughts, feelings and behaviours are connected, in order to develop associations between sensory experiences and emotional understanding. In this session we will use the Heartbeat and also work through a number of the games (both verbal and non-verbal) described by Hunter. We will conclude with a discussion of what adaptations might be needed to use this approach with multi-lingual children with ASD