

Day 1

Poster 1:

The potential of a gesture comprehension task to screen for DLD in bilingual children

Lotte Van den Eynde¹, Inge Zink¹, Maaïke Vandermosten¹, Ellen Rombouts¹

¹ Catholic University of Leuven (KU Leuven), Belgium

Correctly identifying developmental language disorder (DLD) in bilingual children is still a substantial challenge (Grech & Dodd, 2007). Given the many misdiagnoses, there is an acute need for a screening test that is less influenced by the large variation in language experiences and that allows for early detection. In this regard, a gesture task shows great promise. Gesture development is strongly related to language development with studies indicating that gesture comprehension may predict language development (Capone & McGregor, 2004; Demir, Levine, & Goldin-Meadow, 2015; Sansavini et al., 2021). Notably, an iconic gesture comprehension task can differentiate between young, monolingual children with and without DLD (Botting, Riches, Gaynor, & Morgan, 2010; Lüke, Ritterfield, Grimminger, Rohlfing, & Liszkowski, 2020; Wray, Norbury, & Alcock, 2016). A gesture comprehension task is highly promising to detect DLD in bilingual children, as the task does not require verbal output and has potential to be used regardless of a child's home or second language. In our study, we explore whether a gesture task can differentiate between bilingual children with and without DLD, and we examine its relationship with language proficiency measured by standardized language tests.

Analogous to Lüke and colleagues (2020), we developed an iconic gesture comprehension task consisting of 31 gestures. Children watch a gesture and select the corresponding image from a set of four images: a semantic-related distractor, a gesture-related distractor, an unrelated distractor, and the target item. The task will be completed by 40 bilingual children with typical development (TD) and 40 bilingual children with DLD between 3 and 9 years old. Standardized language tests are administered for validation purposes.

Preliminary findings from participants (TD=35, DLD=40) reveal that bilingual TD children significantly outperform bilingual children with DLD on the gesture task. Additionally, performance on the gesture task displays significant correlations with language tests assessing lexicon, semantics, and morphosyntax. Remarkably, the overall diagnostic accuracy of the gesture task reaches 75%. These results suggest that the gesture comprehension task holds promise as a screening instrument for DLD in bilingual children

Poster 2:

Parental vocabulary checklist based on LITMUS Cross-Linguistic Lexical Tasks

Magdalena Luniewska¹, Magdalena Krysztofiak¹, Ewa Haman¹

¹University of Warsaw, Poland

The LITMUS (Language Impairment Testing in Multilingual Settings) Battery was developed almost 9 years ago (Armon-Lotem et al., 2015). Since then, the tools have been extensively developed: new language versions have been prepared and validation data have been collected. Here, we will present an attempt to further develop the LITMUS Cross-Linguistic Lexical Task, namely a parental checklist based on the Polish version of the CLT.

Although parental reports have been used for over 30 years to study the vocabulary of children under the age of 4 (Marchman & Dale, 2023), research investigating parental checklists as a measure of vocabulary in older children is still very limited (Libertus et al., 2015).

In our study, we tested whether a parental checklist based on items from standardized picture naming and picture recognition tasks (LITMUS CLT-PL, Haman et al., 2015) could be used to assess the vocabulary of preschool children. First, 94 monolingual children aged 3;0 to 5;11 were tested with the CLT-PL. Second, their parents completed a checklist with the same set of items, marking all the words they had ever heard in their child's spontaneous speech.

The parent checklist showed very high internal consistency. Scores on the parental checklist and the CLT were moderately correlated ($r = .38$). We compared the total number of words marked by the parents and the number of items correctly answered by the children in the picture naming and picture recognition tasks. In picture naming, we found no difference between children's scores and the number of words selected by parents. At the same time, parents selected significantly fewer words than the children correctly identified in the picture recognition task. When the data were analyzed at the level of individual items (i.e. whether parents selected the same items as the children correctly identified), we found that the level of agreement was low.

We conclude that parental checklists should be used with caution with children over the age of four who already have a large vocabulary. Perhaps the checklist would be more useful with younger children, especially multilinguals whose input and vocabulary are divided between two languages.

Poster 3:

Identifying Early Markers of DLD: Longitudinal Assessment of Second Language Acquisition in Multilingual Preschoolers

Jannika Böse¹, Anna-Lena Scherger¹

¹TU Dortmund University, Germany

Multilingualism is an increasingly relevant phenomenon in today's society, with children often exposed to multiple languages from an early age. One of the pressing challenges in the field of child language studies is the assessment of developmental language disorders (DLD) among multilingual children (Lüke et al., 2020), as they often face unique linguistic environments (Unsworth et al., 2014).

The investigation presented in this paper is part of a greater research project on language support of multilingual preschool children with low exposure to German as their second language (L2), visiting specialized preschool programs in western Germany. Our study involves a longitudinal examination of initially 54 multilingual children (T1, age: $M=4;8$, $SD=0.41$, gender: 57% female) at the transition from preschool to school. To capture the L2-skills longitudinally, we conducted assessments at three time points within 10 months around transition to school. L2-receptive grammar, vocabulary, and phonological complexity skills of the children were assessed at all three measurement occasions, amongst others, using LITMUS-tools.

Our initial findings show significant improvements in L2 receptive language over time, with improvements in receptive grammar remaining until the follow-up assessments (T3), which took place after the children had transitioned to school (see Author et al., 2023). To identify early markers for DLD, L2-skills of children with the lowest results in previous assessments (25%) were assessed again in November 2023 (fourth measurement occasion, T4). Since at T4 the children have regular contact with their L2 for more than 18 months, diagnostics were carried out to identify DLD using standardized test procedures for multilingual children (LiSeDaZ, Schulz & Tracy, 2011; PDSS, Kauschke et al., 2022).

Initial analyses indicate that the children achieve below-average scores in most subtests, in some cases even below the 1.5 standard deviations specified for the identification of DLD. Further analysis of these results and regression models will provide a more comprehensive picture of language development trajectories and offer valuable guidance for the assessment of early L2-skills, identifying discriminative tasks retrospectively for T1. Our study addresses a critical gap in the understanding of L2-assessment and the delamination of early DLD-markers and typical language development among multilingual children.

Poster 4:

**Bilingual intervention practices for bilingual children with language disorders?
A synthesis of French-speaking practitioners' experiences**

Katrin Skoruppa¹ & Hyuna Varguet¹

¹Institut des sciences logopédiques, Université de Neuchâtel, Suisse

Over the last decades, the number of children growing up with more than one language worldwide has been steadily increasing, calling for a reconsideration of largely monolingual speech and language therapy practices for children with language disorders (e.g. Armon-Lotem 2012). Recent years have seen significant progress in oral language assessment and diagnosis, both in research contexts and in the clinic (e.g. Armon-Lotem et al. 2015, Scharff-Rethfeldt et al. 2023), but subsequent intervention with bilingual children still seems to be largely monolingual in orientation (see systematic review by Nair et al. 2022). Nevertheless, over the last decades, clinicians in a number of countries have been able to implement, at a local level, a number of interesting strategies that make use of children's other languages (e.g. Kohnert et al. 2020, Schmidt 2021), which are unfortunately still poorly documented in international research.

Thus, we are currently collecting practitioners' experiences via an online questionnaire that we are currently deploying in mono- and bilingual French-speaking countries (Switzerland, Belgium, France, Canada, Lebanon, Morocco, Algeria, Benin). In parallel, we are carrying out semi-structured focus group interviews with small groups of practitioners experienced with bilingual children, both in-person (mainly in Switzerland) and virtually (open to clinicians in any country, planned for French, German and English). By the time of the conference, we will be able to present pilot questionnaire results as well as a first synthesis of our focus groups in French.

Both during the interviews and in our questionnaire, we first ask more general questions about how clinicians consider the other languages of bilingual children in their practice, after which we zoom in specifically on the period of the intervention. We distinguish bilingual intervention strategies for languages which the clinicians speak (at least partially) vs. languages which they do not, focusing on the timing, type of activities, materials and partners that clinicians prefer in these situations. We also address situations when and reasons why clinicians may not (or only to a minor degree) take into account the other languages of the child, questioning resources and representations in this context.

Poster 5:

Parental language mixing and language outcomes of children with (a suspicion of) Developmental Language Disorder

Merel van Witteloostuijn¹, Elise de Bree², Elma Blom^{1,3}

¹Utrecht University, Netherlands

²University of Amsterdam, Netherlands

³Arctic University of Norway, Norway

Children who grow up multilingually will naturally encounter language mixing in their environment. Since we know that children's language development depends on the quantity and quality of their language input (Anderson et al., 2021), and processing mixed-language input may be more cognitively demanding than processing single-language input (Morini & Newman, 2019), the frequency with which parents and/or caregivers mix their languages may impact on the language development of their children. This matter is also highly relevant for children with developmental language disorder (DLD), for whom attention to language input is essential. Yet very little is known about language mixing in the input of these children, and the potential consequences for their language development. Although studies of children with typical development suggest that the effect may be small (Bail et al., 2015), the effect could be amplified in children with DLD because of their problems with language uptake/processing (Jackson et al., 2021).

We investigate parental language mixing and its relationship with language outcomes in three- to six-year-old multilingual children with (a suspicion of) DLD in the Netherlands. Parental language mixing is measured through a parental questionnaire (Q-BEx; De Cat et al., 2022) and the LENA™ recording device, used to make day-long audio recordings in the home. We distinguish between the type (between or within speakers) and direction (Dutch to other language or vice versa) of parental language mixing and explore relationships with children's receptive and productive vocabulary (Cross-Lexical Task; CLT) and grammatical abilities in Dutch. The ongoing data collection (current $n = 28$; aim $n = 30$) will be completed in the winter of 2023. The preregistered analyses (<https://osf.io/tnw3u/>) will be conducted in the spring of 2024. The findings will be informative both for language development theory as well as for professionals supporting multilingual families on language use at home.

Poster 6:

Using the Multilingual Assessment Instrument for Narratives (MAIN) to identify macrostructure and microstructure features in the narratives of subsequential bilingual children with DLD and observe language dominance effects: a comparison between elicitation procedures

Silvia Tursi¹, Catia D'Ippolito¹

¹University of Rome Tor Vergata, Italy

Nowadays bilingualism is increasing among children, not only due to migration flows but also to the fact that more and more families decide to opt for a bilingual education. This leads to a new challenge for speech therapists, as the increase of children which grow up in bilingual contexts, simultaneous and subsequential, makes the assessment of DLD more complex (Tsimpli et al., 2016), also due to the lack of standardized protocols, and limited availability of suitable diagnostic tools.

Narratives tasks are considered valuable in the assessment of bilingual children as they allow to gain several information about linguistic, cognitive and social skills in an ecological way (Botting, 2002), and they require knowledge that goes beyond language-specific proficiency (Gagarina et al., 2012).

The Multilingual Assessment Instrument for Narratives (Gagarina et al., 2012; 2019) is the first tool specifically developed for the bilingual population which offers elicitation in both telling and retelling method, thus allowing to assess not only narrative competence and linguistic skills, but also cognitive skills such as attention and short-term memory.

This research will explore microstructure, macrostructure and Internal State Terms usage in children with DLD aged 5-8 with L1 Italian/ L2 English who attend bilingual and international schools in Italy, comparing elicitation procedures, and considering language dominance effects. Preliminary findings from a case study, presented as part of a speech therapy degree thesis following a literature review about the use of MAIN, show weakness in both languages in macrostructure and limited use of ISTs, with predominance of perceptual and motivational terms. Limited expression of ISTs also in the child's dominant language supports the hypothesis that this could be a DLD marker in the bilingual population (Boerma et al; 2016). Microstructure analysis reveals similar difficulties in both languages, such as lexical access and use of pronouns. In L2, also affected by exposure limited to the school context, specific weaknesses in verbal morphology and use of articles are evidenced.

Reflecting weakness in short term and phonological working memory, retelling procedure shows no significative advantage, though a slight benefit in terms of number of story elements and words diversity is observed in L2.

Poster 7:

Bilingual and Monolingual Comparisons of Vietnamese Nonword Repetition

Dr. Giang Pham¹, Ms. Ngoc Do², Dr. Kerry Ebert³

¹San Diego State University, the United States

²San Diego State University, the United States

³University of Minnesota, the United States

Nonword repetition (NWR) is considered an index of short-term phonological memory, an underlying weakness among children with developmental language disorder (DLD) across languages (Leonard, 2014). A recent metanalysis of the diagnostic accuracy of NWR with bilingual children (Ortiz, 2021), identified 13 articles, most of which administered NWR tasks in children's second language with only a few studies including NWR in the first language (L1). Nearly all diagnostic accuracy studies consisted of NWR conforming to the phonology of Indo-European languages (English, Spanish, French, Dutch, German) with Hebrew as the exception. Moreover, there has been little discussion on cross-linguistic influences in scoring NWR in bilingual children (Wong & Ebert, 2023).

The present study extends the validation of a NWR task created for speakers of Vietnamese (Pham et al., 2018), the most spoken language in the Austro-Asiatic family. Of key interest is cross-linguistic influence in scoring, when Vietnamese is the heritage L1, and oftentimes the weaker language as children in the United States shift in dominance from the L1 to English (Pham & Kohnert, 2014). In a diagnostic accuracy study using the Vietnamese NWR task with monolingual kindergartners, Pham and Ebert (2020) found that syllable and percent phonemes correct (PPC) scoring showed adequate sensitivity and specificity (>.80) and positive and negative likelihood ratios within the informative ranges (>3 and <.3, respectively). The present study compares Vietnamese NWR performance among new samples of TD bilingual children, TD monolingual children, and monolingual children with DLD. Presuming intact short-term phonological memory, TD children may show similar performance no matter their language status. However, because NWR performance is influenced by language exposure (e.g., Windsor et al., 2010), the TD bilingual group may overlap with the monolingual group with DLD. Scoring systems that do and do not consider cross-linguistic influence will be evaluated (e.g., Wong & Ebert, 2023) to find a system that does not show floor or ceiling effects and that shows expected accuracy increases with age and decreases with lengthier stimuli (e.g., Pham et al., 2018). Findings will inform scoring and analytical procedures for future studies of bilingual DLD in Vietnamese-speaking populations.

Poster 8:

The relationship between aspects of item presentation and children's performance in Nonword repetition tasks

Heeg, Kathrin¹; Frey, Nathalie¹; Eikerling, Maren²; Bloder, Theresa³; Starke, Anja⁴, Lüke, Carina¹

¹Julius-Maximilians-Universität Würzburg, Germany

²Martin-Luther-Universität Halle Wittenberg, Germany

³Katholische Universität Eichstätt-Ingolstadt, Germany

⁴Universität Bremen, Germany

The phonological short-term memory is central for developing language skills and therefore an indicator for identifying children with developmental language disorders (DLD) (Coady & Evans, 2008). Since Nonword repetition tasks (NWRT) have been proven to be a reliable resource to evaluate children's phonological short-term memory (Schwob et al. 2021), they are often used for clinical language assessment. Since they are considered to be largely independent of linguistic knowledge, NWRT are further successfully used to distinguish between persistent DLD and heterogeneous developmental variations often seen in typically developing multilingual children (Archibald, 2009). This is a crucial aspect for avoiding misdiagnoses in this population. Still, many NWRT lack specific instructions regarding task administration. Therefore, differing item presentation across examiners can be expected. However, the influence of aspects of item presentation on children's repetition performance has so far received little attention.

In this study, the influence of pace and mode of item presentation on children's nonword repetition performance were examined.

In an AB-BA design we assessed the capacity of the phonological working memory in 96 mono- and multilingual children with a common German NWRT (Mottier, 1951). Pace: 42 children (57% boys, 13% multilingual, $M = 6;2$ years, $SD = 9.09$ months) were presented with pre-recorded audio items at a rate of either one ("slow") or two syllables ("fast") per second. Mode: 54 children (46% boys, 46% multilingual, $M = 5;5$ years, $SD = 6.88$ months) were presented with either pre-recorded stimuli or items live-spoken by the examiner. For both pace and mode, the results varied depending on the condition: More nonwords were repeated correctly when presented at the faster pace compared to the slower presentation ($M = 2.52$, $t(41) = 8.12$, $p < .001$, $d = .833$), and when presented live by the examiner compared to the pre-recorded stimuli ($M = -1.741$, $t(53) = -4.813$, $p < .001$, $d = .688$). Differences in the presentation of nonwords not only affect children's repetition performance, but subsequently have an impact on diagnostic outcomes. To ensure reliable results and avoid misdiagnoses, particularly in multilingual children, it is essential to establish test instructions that enable consistent application.

Poster 9:

Comparison between structure repetition in SRT and spontaneous structure production in MAIN in bilingual German-speaking children with DLD

Tina Ghaemi¹, Jenny Thillmann¹

¹TU Dortmund, Germany

Introduction. It is well established that morpho-syntax is prone to be impaired in bilingual children with developmental language disorder (DLD) (Armon-Lotem et al., 2015b). For German speaking bilingual children, subject-verb agreement (SVA) and verbs in verb-second position (V2) tend to pose challenges in acquisition (Schulz et al., 2017; Scherger, 2019). LITMUS-Sentence Repetition Tasks (SRT; Marinis & Armon-Lotem, 2015; Hamann et al., 2013) and Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al., 2019) have been shown to be useful in tapping into morpho-syntactical knowledge, indicating bilingual children's abilities in producing morpho-syntactic structures. However, these assessment tools differ in elicitation architecture: SRT focuses on morpho-syntactic structures via repetition while MAIN's storytelling subtest stimulates spontaneous narratives targeting similar structures. This difference, therefore, draws a fundamental comparison between SRT and MAIN (storytelling) for displaying the child's ability in producing morpho-syntactic structures. Our study, particularly, aims at investigating (a) how bilingual German-speaking children with DLD produce SVA and V2 in both SRT and MAIN and (b) whether structure repetition in SRT differs from spontaneous structure production in MAIN in terms of accuracy.

Method. Within a large-scale project, we intend to recruit 1300 bilingual children. In the initial project phase, we recruit 30 bilingual German-speaking children with DLD in the age range of 6 to 8, attending a specialized school for language support. During SRT, children are required to repeat sentences that are auditorily presented. For storytelling (MAIN's subtest), children are asked to look at the picture-story and tell the story while the experimenter has no visual access to the pictures.

Analysis. The accuracy of SVA and V2 in SRT and MAIN is coded by correct (1) and incorrect (0). Then, the accuracy data is analyzed by a generalized linear mixed-effect model to yield potential effects of the testing tools (SRT vs. MAIN) and the target structures (SVA vs. V2).

Results. Under the null hypothesis, SRT and MAIN would effectively detect potential deficits in SVA and V2. However, due to the higher demand of self-initiated production in MAIN we expect children to perform better in SRT. Results will be discussed in terms of how informative SRTs are for morpho-syntactical knowledge in comparison to MAIN.

Bilinguals at risk for DLD: exploring the narrative and reading predictors in L2 German

Freideriki Tselekidou,^{1, 2} Elna Haffner¹, Katrin Lindner³, Natalia Gagarina¹

¹Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS; Berlin, Germany)

²Humboldt-Universität zu Berlin (Berlin, Germany)

³Ludwig-Maximilians Universität München (LMU; Munich, Germany)

Background: In bilingual children with Developmental Language Disorder (DLD), predictors for narrative macrostructure and their connections with reading are not yet fully understood. The present study uses the multidimensional model for narrative organization (operationalized as story structure (SS), story complexity (SC), and internal state terms (IST) LITMUS MAIN; Gagarina et al., 2012) to examine the effects of language and cognitive factors, as well as Age of Bilingualism (AoB) on (1) oral narrative macrostructure, and (2) silent reading, with the added inclusion of early macrostructure as a predictor, in a between-groups design (typically developing (TD); at risk (AR) for DLD).

Methods: 50 Russian-German bilinguals were recruited at the beginning of kindergarten and were divided into two age-matched groups: 35 TD and 15 AR, based on their overall language performance, computed as a sum of the expressive and receptive vocabulary and sentence (grammar) comprehension tests in both languages. Both groups were tested again by the end of the first year of kindergarten (M-age = 4;6) in oral narratives, vocabulary (expressive and receptive), sentence comprehension and verbal working memory (WM; via N-back task) in L2 German. Thirty-five of these children (26 TD and 9 AR) were followed till the end of Grade 1 (M-age= 7;4) and tested in L2 German silent reading.

Findings: Results from Generalized Linear (Mixed) models showed that vocabulary was the most stable predictor for narrative dimensions (1: SS [AR $p < 0.000009$]; [TD $p < 0.00024$]; SC [AR $p < 0.000154$]; [TD $p < 0.005982$]) and reading skills (2: TD only [$p < 0.0322$]). For IST, vocabulary was only significant for TD children. Likewise, WM tended to affect SC of TD children only. Silent reading skills were significantly influenced by sentence comprehension also only in TD children [$p < 0.0235$]. Finally, AoB did not affect narratives and reading in both groups.

Discussion: This study adds to the scarce evidence on early predictors of narratives and reading in TD and AR bilinguals by highlighting the predictive power of vocabulary. Findings have clinical and educational implications on the early identification of language and literacy in bilingual children AR.

Lexical Processing and Executive Function in Bilingual Children with and without DLD, an ERP study

*Stephanie Martin Vega*¹, *Laurel Lawyer*²

¹University of Essex, UK

²University of Essex, UK

Objective: This study aimed to investigate lexical processing and executive function in bilingual children with and without Developmental Language Disorder (DLD) using electroencephalography (EEG).

Methods: Participants were 36 DLD Spanish-English bilinguals, ages 7 to 10 and 32 Typically developed (TD) matched grouped on gender, age, SES and NonVerbal IQ. Participants were recruited from 5 Bilingual schools in Chile in 2021. Lexical processing abilities were measured using a “Lexical Decision task”, and participants were presented with 80 stimuli containing 40 non-words, 20 Spanish words, and 20 English words. Spanish words did not include any item with special characters such as /ñ/ and accents in words like más (more) or música (music). All stimuli had between 5 to 7 characters (MEAN=6.12, SD=0.74). The second task was a Stroop task, for this, bilinguals add the complexity of being able to perform the Stroop task in both of their languages. Cognitive function, inhibitory control and Language interference were examined with this task. The task had 4 different conditions for language interference. English and Spanish word colours were used for congruent (same colour name and ink colour) and incongruent (different ink colour) conditions. It is important to mention that only congruent/incongruent conditions were “recorded”, and priming was only used as a distractor. EEG and behavioural data were recorded while participants were doing both tasks.

Results: For the lexical decision task, a visual inspection of grand averages showed a centro-parietal negative ongoing ERP component in the 350-500 ms interval which was visible for non-words for both groups. This N400 component was not present for Spanish and English words. A linear mixed-effect model was done, and an interaction of type of word and group was made (type*group). This showed a significant effect on type of word, meaning that Non-Words were the hardest ones to be categorised for both groups ($F(2,30) = 52.23, p < .001$). There was no significant interaction between groups. The same analysis was made for the Stroop task. A three-way interaction was done with language*group*congruency. Results show significant results between language and congruency ($F(2,79) = 10.4; p < .001$), which means that incongruent condition for Spanish and English was the hardest to categorise. An N400 was visible for both groups' incongruent condition in Spanish and English. This could be explained because an incongruent condition creates conflict between the word and the colour, requiring increased cognitive control to resolve the conflict and resulting in longer responses for incongruent conditions.

Conclusion: Contrary to initial expectations, the results of this study revealed no significant differences in lexical processing and language interference between bilingual children with and without DLD. Both groups demonstrated similar performance in the lexical decision and Stroop task, suggesting that lexical processing abilities were comparable irrespective of DLD status. These findings challenge previous assumptions regarding the impact of DLD on lexical processing and executive functions in bilingual children with and without DLD.

Improving Bilingual Assessment Efficacy with a Collaborative World Language Library

Kester, E. S.¹, Prath, S. W.¹

¹Bilinguistics, United States

Decades of research has indicated that bi/multilingual children are often over- and under-diagnosed with Specific Language Impairment (SLI)/Developmental Language Disorders (DLD) as a result of low efficacy in bilingual assessment. Cross-linguistic influence in bi/multilingual individuals has been well documented but is not widely understood. Professionals working with bi/multilingual children need to 1) understand how languages influence each other and 2) have access to information comparing and contrasting the differences between languages in order to make decisions about whether a language pattern is due to cross-linguistic influence or is the result of a true disorder.

We will share how a collaboration with professors at universities throughout the United States has resulted in the building of a World Language Library (<https://bilinguistics.com/language/>) that compares and contrasts English with over 100 different targeted languages. The World Language Library is a collaborative compilation of current research that is fluid and can grow as new research is published.

We will present case studies from bilingual children with different language backgrounds to demonstrate how the utilization of research on cross-linguistic patterns combined with contrastive analyses of languages facilitates diagnostic decision-making when using alternative assessment measures. The overall goal is to provide the information that educators need to make accurate diagnostic decisions about bi/multilingual students so they are on the proper educational trajectory.

Day 2

Poster 1:

Towards more accurate vocabulary assessment in bi/multilingual preschoolers: Norming of the Polish and Norwegian LITMUS-Cross-Linguistic Lexical Tasks

Magdalena Krysztofiak^{1}, Magdalena Łuniewska^{1*}, Martyna Burdach¹, Ayla Fjeld Skorpen²,
Pernille Hansen^{2,3}, Ewa Komorowska¹, Judyta Pacewicz¹, Julia Radzikowska¹, Anna Sara H.
Romøren², Nina Gram Garmann², Ewa Haman¹*

¹University of Warsaw, Poland

²OsloMet – Oslo Metropolitan University, Norway

³Inland Norway University of Applied Sciences, Norway

*These authors contributed equally to this work

Accurate assessment in all languages of a bi/multilingual child is crucial to avoid misdiagnosis of language development. Based on this premise, Cross-Linguistic Lexical Tasks (CLTs) have been developed. CLTs are picture choice and picture naming tasks that assess vocabulary size and lexical processing speed in children aged three to six years. They are currently available in over 35 language versions, each developed according to the same guidelines while taking into account linguistic and cultural differences (Haman et al., 2015). This makes CLT a unique tool that allows the assessment of vocabulary in all languages acquired by a bi/multilingual child. This study aims to investigate the trajectories of bilingual vocabulary development in preschool-aged children of Polish migrants in Norway and to establish norms for the Polish and Norwegian CLT, making it one of the first norming studies of a tool from the LITMUS battery (Armon-Lotem et al., 2015). This poster outlines the norming study, the challenges of data collection, and presents preliminary results.

The study includes three samples: Polish/Norwegian monolingual and Polish-Norwegian bilingual children aged 3;00 to 5;11. Data collection is ongoing and will be completed by early 2024. The children are tested using a specially designed CLT application in Polish and/or Norwegian. So far we have collected data from 455 monolingual Polish children, 80 monolingual Norwegian children, and 94 bilingual Polish-Norwegian children. In addition, some of the children are being retested and the validity of the Polish CLT is being established through comparison with other vocabulary assessment tools (OTSR; Haman et al., 2012; CDI-III; Krajewski et al., 2023).

In general, this study allows us to investigate vocabulary development in Polish-Norwegian bilinguals, taking into account both languages. The norming part of the study is an important step in extending the use of CLTs for diagnostic purposes, both in terms of developing norms and outlining the challenges of conducting large-scale studies. In the future, as other language versions follow the norming process, CLTs will provide a more accurate assessment of lexical development in bi/multilingual children and help to prevent misdiagnosis of developmental language disorder.

Poster 2:

Language-fair assessment tasks for bilingual preschoolers

Solène Belogi¹, Katrin Skoruppa²

¹Université de Neuchâtel, Institut des Sciences Logopédiques, Switzerland

² Université de Neuchâtel, Institut des Sciences Logopédiques, Switzerland

Assessing language in bilingual children is a constant challenge for researchers and SLTs (e.g. Armon-Lotem 2012). In fact, traditional language tests provide a snapshot of what children know at a particular moment and in a particular language. The limit of this approach, especially for bilinguals, is that testing them in one language only (that could even be their weakest one), or using two tests with monolingual norms, will give a biased picture of their real language abilities (Junker et al., 2002; Thordardottir et al., 2006). Thus, there is a need for new testing solutions that are more appropriate for bilinguals.

Dynamic assessment, by observing the processes when children learn new items (words, syntactic rules), is a promising avenue (see reviews by Orellana et al. 2019, Hunt et al. 2022). Another interesting way to explore this question is to look at non-verbal tasks that share strong links with language, like analogical reasoning (Gentner and Namy, 2006).

Here, we created two of those tasks: dynamic novel-word learning, and non-verbal analogical reasoning. Both tasks were built with extremely easy verbal instructions and test items that were independent of test language knowledge and can thus be considered “language-fair”.

In a pilot study, we compared typically developing (n=21, mAge = 65 months) and DLD (n=21, mAge = 71 months) bilingual children. Clinical status was confirmed via a non-word repetition task, which showed significant differences between the two groups ($\beta = -5.2$, $p < .001$). Even though DLD children performed lower than typically developing ones in both tasks, in linear regressions including age and parental education as covariates, clinical status was a significant predictor for word learning scores ($\beta = -1.0$, $p = .05$) but not for analogical reasoning ($\beta = -3.4$, $p = .53$).

By the time of the conference, we will perform additional analyses on a reduced but better matched sample of participants and assess potential differences in error patterns.

These preliminary results open interesting new avenues of assessing language, that take more into account the specificities of bilingual language development than traditional tests. Finally, we will discuss how they complement other promising assessment tasks for bilingual children.

Poster 3:

A longitudinal study of language proficiency and linguistic challenges in bilingual Arabic-Swedish-speaking children

Pascale Wehbe¹, Ute Bohnacker¹

¹Uppsala University, Sweden

In Sweden, just like in other parts of the world, a challenge in speech-and-language pathology assessments has been to find suitable ways to assess bilingual children with suspected developmental language disorder (DLD). With Arabic being the largest minority language in Sweden (Skolverket 2023), the first larger-scale study in Sweden is being conducted to learn more about the typical development of bilingual Swedish-Arabic-speaking children. In the cross-sectional part of the study, 100 Arabic-Swedish-speaking children aged 4-7 were assessed in both their languages (Öberg 2020, Haddad 2022). These children were either born in Sweden or had lived in Sweden for at least 2 years. In an ongoing longitudinal study, 23 of the 4-5-year-old children have been retested 5 years later at age 9-11. All children have been attending Swedish-medium schools since preschool. The assessment tools used are from the LITMUS battery (MAIN storytelling and comprehension, CLT vocabulary production and comprehension, QU-NWR, CL-NWR (nonword repetition tasks)), complemented by TROG2 (comprehension of grammar in Swedish), questionnaires, parental interviews, teacher interviews, and school observations. Although not all the data have been fully analyzed yet, the following patterns emerge: At age 9-11, the Arabic-Swedish-speaking still exhibit smaller vocabularies when tested in each of their languages compared to monolingual children. Regarding TROG2, the children fall within the average range when compared to the monolingual Swedish norm. Teacher interviews highlight difficulties in evaluating the language proficiency of bilingual children, along with a wish for more education on bilingualism in teacher training. In the cross-sectional Arabic-Swedish study, it was observed that some children with typical language development had results overlapping with age-matched children with DLD (Öberg/Bohnacker 2022). In the longitudinal follow-up 5 years later, some children (that were considered typically-developing when younger) still exhibit low vocabulary scores and incoherent narratives in Swedish, despite having attended Swedish preschools and schools since age 2 or 3. We show how the parental and teacher interviews and school observations can shed light on whether the low proficiency in Swedish is due to exposure and the environment that the children are in, or whether it is an indicator of DLD.

Poster 4:

How to identify bilingual children with DLD in Flanders?

Mostaert^{1, 2}, C., Leysen^{1, 2}, H., Francke², I.

¹Thomas More University of Applied Sciences, Centre of Expertise Care and Wellbeing, Expertise Unit People and Wellbeing, Antwerp, Belgium

²Thomas More University of Applied Sciences, Department of Speech and Language Pathology and Audiology, Antwerp, Belgium

Background - The identification of a developmental language disorder (DLD) in bilingual children is not an easy task (e.g. Boerma & Blom, 2017; Bonifacci et al., 2020). Therefore, a protocol was developed for language assessment in bilingual preschool children in Flanders (Belgium) aged 4 to 6 years (Mostaert & Leysen, 2022). A combination of three tasks showed good discriminant validity, with 86% of the participating children identified correctly (sensitivity: 100%; specificity: 82%).

Aim - The goal of this study was to extend the age range of the protocol.

Methods - A test group of 52 bilingual primary school-aged children (5;02 – 8;10) participated in this study, consisting of both children with a typical development (n = 38) and children with DLD (n = 14). Children with a typical development were selected from mainstream schools, children with DLD were recruited via speech language pathologists (SLPs) with specific expertise in multilingualism.

Data collection consisted of: demographic information and linguistic history, a standardized language assessment in their second language (Dutch) and parental report on first language development. Machine learning was used to indicate which tasks are most decisive in identifying participants with DLD.

Another 26 bilingual children (5;11 - 8;11), assessed by SLPs, acted as a validation group.

Results - Results showed that the children with DLD scored significantly lower on almost all linguistic tests compared to children with a typical development. A combined model that included (1) the ALDeQ-NL, (2) the core language score of the CELF-5-NL and (3) the MAIN story comprehension after retelling reached good discriminant validity, both in the test group (90% identified correctly) and validation group (81% identified correctly).

Conclusions - The protocol is a valuable tool to identify bilingual children with DLD and determine which children are in need of speech language therapy.

Keywords - bilingual, language assessment, Developmental Language Disorder

Poster 5:

Developmental Language Disorder in multilingual caseloads: The point of view of Speech and Language Pathologists in Southeast Asia.

Giuditta Smith¹, Sarah Verdon², Ying Shin Chu³, Rogayah A. Razak⁴, Deborah Chow³, Yazmin A. Rusli³, Mohd Azmarul A. Aziz⁵, Ben PHAM⁶, Hafidz Triantoro Aji Pratomo⁷ & Maria Garraffa¹

¹University of East Anglia, UK

²Charles Sturt University, Australia

³Universiti Kebangsaan Malaysia, Malaysia

⁴SEGi University, Malaysia,

⁵Universiti Sains Malaysia, Malaysia

⁶Hanoi National University of Education, Vietnam

⁷Poltekkes Kemenkes Surakarta, Indonesia

Background: Speech and Language Pathologists (SLPs) face several challenges in the assessment and management of multilingual patients, particularly in relation to Developmental Language Disorder (DLD). These range from the known challenges in the differentiation of the disorder in multilingual speakers from typical acquisition to the lack of consensus on best practices for DLD in multilingual patients (Armon-Lotem, de Jong, & Meir, 2015).

Objectives: Research mostly reports the experience of SLPs working in Western countries, although a general lack of appropriate tools as well as specific training has been reported in some SLPs working in multilingual societies (Teoh, Brebner & McAllister, 2018). In the present study, we aimed to investigate the current practices and challenges faced by SLPs in Southeast Asia when diagnosing DLD in a multilingual caseload.

Methods: A mixed-methods study was developed to investigate the point of view of SLPs in Malaysia, Indonesia, and Vietnam. In Malaysia and Indonesia several languages and local dialects are spoken, while the Vietnamese population mostly speaks the official language. In an online survey, 110 certified SLPs (44 Malaysian, 33 Vietnamese, 33 Indonesian) were asked about the challenges faced in the provision of service to multilingual patients. A further 15 Malaysian SLPs participated in a focus group discussion around diagnosing and treating DLD in Malaysia.

Results: Overall, participants reported frequently dealing with lack of appropriate tools for the assessment of multilingual patients. The topic of inappropriateness of standardised assessments arose in the focus group discussion, with some participants stating these are often Western and/or English assessments not appropriate for working with multilingual caseloads. The focus group discussion also revealed uncertainty around the very definition of DLD in Malaysian healthcare and, consequently, around the best practices for diagnosis. A lack of specific training on topics of multilingualism and language disorder was also reported in the survey across the three countries.

Outcomes: Results highlight a need to further promote the terminology and protocols for DLD internationally, to ensure equitable service to multilingual children. Of relevance for

multilingual societies is the need to promote use and creation of culturally and linguistically tailored assessment tools.

Poster 6:

Rate of L2 (English) Acquisition for Bilingual Students with and Without Developmental Language Disorder and Autism in the U.S.

Isis Cowan¹, Mallory Jenkins¹, Josh Stein¹, Adam Winsler¹

¹George Mason University, United States of America

Increasing numbers of English Language Learners (ELLs) and bilingual students in U.S. schools provide both challenges and opportunities for teachers, service providers, and researchers. Correctly diagnosing developmental language disorder (DLD, previously known as Specific Language Impairment-SLI) is more challenging for children raised in multilingual environments since little is known about language trajectories for bilingual children with DLD. Similarly, bilingualism in autism spectrum disorder (ASD) is not well understood given that parents of autistic children are sadly often advised by professionals to speak only one language at home despite zero evidence that autistic individuals struggle with two languages. Longitudinal research on L1 and L2 trajectories is clearly needed for ELL/bilingual children with DLD and /or ASD.

The current project examines rates of L2 (English) acquisition in a large ($n=38,505$) and ethnically diverse (57% Hispanic/Latine, 34% Black; 9% White/Asian/Mixed/Other), linguistically diverse (52% ELL - 90% with Spanish as L1), and predominantly low-income (80% qualified for free lunch) sample of children who were followed from pre-K (age 4) through 5th grade (age 8-9) in a large-scale, university-community collaborative, school readiness program evaluation project. Language skills were assessed at age four by the research team in the child's strongest language. Then, schools shared administrative data each year/grade on primary exceptionality/disability status, ELL status, and English proficiency for the ELLs [on a 5-point scale - 1 (beginner) to 5 (advanced)], with the student exiting English as a Second Language (ESOL) services when they get to level 5.

Out of the total sample, 54% ($n=20,842$) were identified by the school as ELL. 299 students (0.78%) had DLD/SLI as their primary exceptionality, and 437 (1.13%) had ASD. 202 (69%) of those with DLD were ELLs, and 382 (66%) of the ASD students were ELLs. Data collection is complete. We will determine whether L2 acquisition rates are similar for ELLs with and without DLD (and with and without ASD) via mixed ANOVAs, with student English proficiency scores each year as the repeated measure, and disability status (DLD vs. typically developing; then ASD vs. typically developing in a separate model) and gender (male, female) as independent variables.

Poster 7:

Development of Cross-linguistic Lexical Task for Romani/Boyash language

Anja Slovinc^{1,2}, Sanja Očurščak Žuliček¹, Gordana Hržica²

¹Center of Upbringing and Education Čakovec, Croatia

²University of Zagreb, Faculty for Education and Rehabilitation Sciences, Department of Speech and Language Pathology, Croatia

Discrimination between bilingual development and language disorder poses challenges, risking misidentification of bilingual children (Verdon et al. 2019; Li'l et al. 2019). The complexity intensifies in contexts where a child acquires a minority language without assessment materials (O'Toole & Hickey 2013). In Croatia's northern region, the Roma minority predominantly learns Boyash as their first language and later Croatian. They are assessed only in the majority language. Despite some research on Roma children's language acquisition (e.g. Kyuchukov 2019), notable gaps exist in assessment materials for Boyash. The LITMUS battery offers an avenue for developing essential assessment tools.

This paper details the development of a Cross-linguistic Lexical Task (Haman et al. 2015) for Boyash, addressing challenges tied to language status, literacy gaps, and the lack of standardization. The adaptation involves two phases, beginning with naming, where 326 pictures were associated with words by Boyash speakers. Sociocultural considerations led to offline data collection in Roma villages, with participants providing verbal responses due to limited writing skills. The images, mainly depicting persons' skin colors, were chosen to align with the minority's characteristics. Data collection included 26 participants, aged 18 to 75, in four Roma villages, using a Google Form on researchers' laptops. Verbal responses, reflective of Boyash's primarily oral nature, were recorded and transcribed with a native speaker's assistance, using a transcription system established by Radosavljević (2022). Linguistic analysis, such as establishing base forms of words, involved collaboration with a Romanian language expert.

Future steps encompass gathering data on age of acquisition and calculating a complexity index. The paper emphasizes the scarcity of Boyash-fluent linguists, underscoring the importance of community involvement and adaptation to sociocultural nuances. Addressing these challenges contributes to crucial assessment tool development for Boyash, which is relevant for Boyash speakers outside Croatia. Issues presented in the paper present are also relevant for other contexts featuring immersion education settings and predominantly spoken minority languages lacking linguistic support.

Poster 8:

L2 sentence comprehension and exposure effects in sequentially bilingual children with TD and DLD

Sini Smolander^{1,2,3} Marja Laasonen^{1,3}, Pekka Lahti-Nuutila⁴, Eva Arkkila¹, Elin Thordardottir⁵, Sari Kunnari²

¹Helsinki University Hospital and University of Helsinki, Finland

²University of Oulu, Finland

³University of Eastern Finland, Finland

⁴University of Helsinki, Finland

⁵McGill University, Canada

Background: Differentiating typical language development and developmental language disorder (DLD) in bilingual children is challenging. Since societal language is often the language shared between the child and the SLT, there is a need for a better understanding of the applicability of the available L2 language tests. Particularly, scarcely studied sentence comprehension and the effects of L2 exposure on performance in this domain could offer valuable information in differentiating DLD in bilingual children.

Aim: We investigated sentence comprehension and L2 exposure effects in sequentially bilingual typically developing children and bilingual children with DLD. We carried out group-level comparisons and examined the classification accuracy of two L2 sentence comprehension tests while considering several explanatory factors.

Methods: In total 100 6-year-old children were recruited from daycare centres and a hospital clinic. Two offline tests were used to investigate sentence-level comprehension in Finnish. We used multiple regression analysis to compare TD and DLD performance on a group level and took the effects of relative lifetime exposure to L2 into account. Covariate-specific receiver operating characteristic (ROC) analysis was used to estimate the classification accuracy of the tests.

Results: Typically developing bilingual children performed significantly better compared to their peers with DLD in the sentence comprehension tests. The L2 exposure affected both groups similarly. The effect was significant but small. The sensitivity and specificity of the tests were good at their best, but the classification accuracy depended greatly on exposure.

Conclusions: Sentence comprehension performance in L2 is promising in assisting the differentiation of TD and DLD in children with several first-language backgrounds. It is important to add classification accuracy analysis to group comparisons when interpreting the utility of an assessment tool. In addition, explanatory factors, such as language exposure need to be considered.

Poster 9:

Navigating narratives: Unpacking strengths and weaknesses in the macrostructure of Croatian-speaking children with Williams syndrome

Alexandra Perovic¹, Gordana Hržica², Sanda Huljev Frković³, Ana Bogdanić³

¹University College London, United Kingdom

²University of Zagreb, Croatia

³University Hospital Centre Zagreb, Croatia

⁵Radboud University, NL

Narratives of English-speaking children with Williams syndrome (WS) contain frequent morphological errors and few complex syntactic constructions, resembling the grammatical profile of Developmental Language Disorder (DLD). However, on macrostructural narrative measures, these children score lower than typically developing (TD) and children with DLD (Reilly et al., 2004). This performance contrasts with their relative strength in employing evaluative devices in narratives, linked to the unique cognitive and socio-emotional profile associated with WS (Lacroix et al., 2007). While research on Slavic speakers with WS is limited, there is almost no existing literature on narrative skills in Croatian-speaking individuals with WS.

In the first study to use the LITMUS Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al. 2019; Hržica & Kuvač-Kraljević, 2020) to elicit narratives in Croatian-speaking children with WS, we focus on three macrostructural components: Internal State Terms (ISTs), story structure and structural complexity.

Our current sample includes four Croatian-speaking children with WS aged 9-11 (Mean age=10;1, SD=1;4). Background cognitive and language assessments depict a typical WS profile: mild intellectual disability (Wechsler Intelligence Scales for Children-Fourth Edition, WISC-IV), poorer receptive vocabulary (Mean SS=59.5, SD=18,6; Peabody Picture Vocabulary Test, HR-PPVT-III), and poorer receptive grammar (Mean SS=69, SD=18,1; Test of Reception of Grammar, HR-TROG-2). Their narratives, generated using the telling mode of the Baby Goats story, were compared to two groups of 6-year-old TD controls individually matched on TROG (TROG-TD group) and PPVT (PPVT-TD group).

A stark contrast emerged in our participants' use of ISTs, with children with WS using more ISTs compared to controls (WS- $M=7.5$, $SD=4.7$; TROG-TD- $M=2$, $SD=2.2$; PPVT-TD- $M=2.3$, $SD=2.1$). However, this advantage didn't translate into better overall narratives. While similar scores on Story Structure were noted in the three groups (WS- $M=8.0$, $SD=2.9$; TROG-TD- $M=5.8$, $SD=2.2$; PPVT-TD- $M=6.3$, $SD=1.5$), Structure Complexity was noticeably poorer in participants with WS (GAO sequences absent) compared to considerably younger controls (30% produced GAO sequences).

Our findings align with those reported for English-speaking children with WS, demonstrating a stronger use of ISTs but weaker story complexity. Although constrained by small samples at present, our study supports the observed patterns of strengths and weaknesses in narrative competence in WS.

Poster 10:

Automatic Dynamic Novel Word Learning for DLD risk identification in bilingual children

Maren Eikerling¹, Alice Montanari², Maria Luisa Lorusso²

¹Speech and Language Pedagogy and Pathology, Department of Special and Inclusive Education (Martin Luther University Halle-Wittenberg, Germany)

²Scientific Institute IRCCS E. Medea (Bosisio Parini, Italy)

Innovative diagnostic tools may reduce the risk of misdiagnoses in language assessment of bilingual children (Dam & Pham, 2023). Dynamic Assessment (DA), for example, captures the child's learning potential using a „test-teach-retest“ approach. DA appears suitable for language assessment in multilingual children since it is less dependent of pre-existing language skills (Hunt et al., 2022). Computerised screening procedures facilitate the assessment of multilingual children in their family language (L1) as well as the implementation: of DA: feedback and tasks are systematically adapted to the performance level of the child under assessment (Eikerling et al., 2023). In the web-based Dynamic Novel Word Learning (DNWL) task used for studies presented, a nonword (NW) is associated with a newly introduced visual object (i.e. Fast Mapping).

Early-sequential and simultaneous bilingual Spanish-Italian-speaking children attending kindergarten in Italy, aged 4 to 6 years, were administered with an Italian and a Spanish version of the DNWL task remotely (study 1). The scores of $n = 16$ children for the Italian version and $n = 15$ for the Spanish version were included in the analyses. Positive correlations with parental questionnaires and other language measures were found. The Italian DNWL paradigm was also found to discriminate between 3 children with Developmental Language Disorder (DLD) and 8 children without risk or diagnosis of DLD. Since DA can be used in children with various L1s provided they have at least some exposure to the language of assessment (L2), 57 mono- and multilingual preschool children living and schooled in Italy were administered with the Italian DNWL paradigm (study 2). Performance of mono- and multilingual children was comparable, but typically developing (TD) children outperformed children with a diagnosis of DLD across both groups. Diagnostic accuracy was exploratorily analysed: DNWL appears to discriminate between children with a DLD diagnosis and TD children.

Overall, the results indicate that a web-based, automatized DNWL test contributes to DLD risk identification. The application of the web-based DNWL with preschool kids appears feasible and informative, even when administered remotely. In how far DNWL discriminates between children with vs. without DLD (risk) needs to be further investigated on larger samples.