

# The Multilingual Mind: Lecture series on multilingualism across disciplines

Summer Semester 2021

Tuesdays, 17.00 - 18.30 (CEST/UTC+02)

Registration: [multilingualmind.eu/lecture-series-2021](https://multilingualmind.eu/lecture-series-2021)



**13.04.2021**

Erika Hoff (Florida Atlantic University): Why bilingual development is not easy, but possible

**20.04.21**

Núria Sebastián Gallés (Pompeu Fabra University): How bilingualism shapes the infants' mind/brain

**27.04.21**

Merel Keijzer (University of Groningen): Language learning as a vaccine to promote healthy aging: the linguistic, social and cognitive effects of third-age language learning

**04.05.21**

Francesca Costa & Maria Teresa Guasti (University of Milano-Bicocca): Double or single literacy in different contexts

**11.05.21**

Napoleon Katsos (University of Cambridge): Bilingualism in children with developmental disorders: From language and cognition to human rights

**18.05.21**

Marco Calabria (Open University of Catalonia): How is cognitive neuropsychology contributing to bilingualism research?

**25.05.21**

Jia'en Yee (University Putra Malaysia): Multilingualism effects on brain structure

**01.06.21**

Maren Eikerling (IRCCS Eugenio Medea): Computerized bilingual screenings of developmental language disorder and developmental dyslexia in bilingual children

**08.06.21**

Johanne Paradis (University of Alberta): Bilingual development in first generation Syrian refugee children: What factors contribute to successes and challenges?

**15.06.21**

Dávid György (University of Geneva): Rhythmic priming of syntactic processing: a common structure?



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### 13.04.21

**Erika Hoff** (Florida Atlantic University): Why Bilingual Development Is Not Easy, but Possible

#### **Abstract**

All normal children in normal environments acquire language. However, all normal children in normal bilingual environments do not acquire two languages. Focusing on data from studies of second-generation immigrant children and young adults from Spanish-speaking homes in the U.S., this talk asks why the acquisition of two languages is more difficult than the acquisition of one. The evidence points to multiple ways in which the environmental supports that language acquisition requires are not equally available for both languages in minority-majority language bilingual communities.

### 20.04.21

**Núria Sebastián Gallés** (Pompeu Fabra University): How bilingualism shapes the infants' mind/brain

#### **Abstract**

The present talk reviews our current knowledge about how infants growing up in bilingual environments learn their two (or more) languages and how such experience shapes nonlinguistic domains. I will first discuss and analyze methodological challenges and then I will review selected topics in language acquisition (language discrimination, word learning) and in cognitive and social development. As we compare with research on monolingual infant language acquisition, we show that our bilingual knowledge is much more limited and fragmented. I will make some suggestions about future good practices to help advance the field.

### 27.04.21

**Merel Keijzer** (University of Groningen): Language learning as a vaccine to promote healthy aging: the linguistic, social and cognitive effects of third-age language learning

#### **Abstract**

Bilingualism has been put forward as a life experience that, similar to musical training or being physically active, may boost cognitive performance and slow down age-related cognitive decline. In more recent years, bilingualism has come to be acknowledged not as a trait but as a highly individual experience where the context of use strongly modulates any cognitive effect that ensues from it (cf. van den Noort et al., 2019). In addition, modulating factors have been shown to interact in intricate ways (Pot, Keijzer and de Bot, 2018). Adding to the complexity is the fact that control processes linked to bilingualism are bidirectional—just as language control can influence cognitive control, individual differences in cognitive functioning predict language learning outcomes and control. The aim of this paper is to shed

light on the bidirectional and individual cognitive, social and linguistic factors in relation to bilingualism and second language learning, with a special focus on older adulthood. On the basis of past and ongoing studies conducted at the Bilingualism and Aging Lab (BALAB) at the University of Groningen, (1) we first show the intricate clustering of modulating individual factors as deterministic of cognitive outcomes of bilingual experiences at the older end of the lifespan; (2) we then briefly present a meta-study of work in the emergent field of third-age language learning, the results of which are related to lifelong bilingualism. We focus on linguistic, cognitive and social outcomes of third-age language learning; (3) we then turn to our own (ongoing) studies which make use of randomized controlled trials to show the cognitive and social effects of introducing a bilingual experience later in life as opposed to other intervention types such as musical training. We investigate this in healthy older adult cohorts but also in (pre)clinical populations of elderly experiencing memory and/or mood problems. By investigating the effects of late-life second language learning as opposed to lifelong bilingualism, we aim to shed more light on the mechanisms underlying the benefits of bilingualism as a life experience, especially as it pertains to cognitive reserve in older adulthood.

#### 04.05.21

**Francesca Costa & Maria Teresa Guasti** (University of Milano-Bicocca): Double or single literacy in different contexts

#### Abstract

This study aimed to establish whether (1) biliteracy negatively affects literacy education in L2 Italian children and (2) biliterates with an alphabetic script differ from biliterates with a logographic script in Italian. We recruited 95 monoliterate and 86 biliterate bilingual children, attending Grade 1st, 3rd, and 5th. They were administered Raven, an expressive vocabulary task and reading tasks (words, nonwords and text). Analyses revealed that biliterates had a higher Raven score than monoliterates (Biliterates:  $M=28.2$   $SD=4.6$ ; monoliterates:  $M=22.4$ ,  $SD=6.4$ ); the two groups did not differ in expressive vocabulary. From 3rd Grade, both groups read words faster than pseudowords, proving that reading had started to be automatized as in monolingual development. In general, we did not find penalty in reading in biliterate. Some advantages in text comprehension were found among biliterate. Then, the group of biliterates was split with 36 children belonging to the Group with an alphabetic script (A\_BL) and 50 children to the logographic script (L\_BL). We found that A\_BL children obtained a higher score in expressive vocabulary ( $F(1,80) = 8.84$ ,  $\eta^2 = 0.10$ ,  $p < 0.05$ ). Both groups read the word faster than pseudowords from 3rd Grade; L\_BL improved faster than A\_BL, as indicated by the Group by Grade interaction ( $F(2,80) = 5.15$ ,  $\eta^2 = 0.1$ ,  $p < 0.05$ ). Small differences were found, due mostly to grades. Our results indicate that biliteracy may provide some advantages for text comprehension. This may be due to biliterates' higher experience with written texts in two languages (see also Rolstad et al. 2005) or to their higher non-verbal reasoning ability. The comprehension of a text is a complex ability that involves different skills. No consistent difference between A\_BL and L\_BL was found, likely due to the fact that literacy in the L1 is not well-advanced, as these children attend L1 classes only on the weekend and in summer.

**11.05.21**

**Napoleon Katsos** (University of Cambridge): Bilingualism in Children with Developmental Disorders: From Language and Cognition to Human Rights

**Abstract**

Among parents and professionals there is a common albeit empirically unsupported belief that multilingual exposure may be detrimental to the development of children with neurodevelopmental disorders such as autism. In this presentation I will first review studies that capture the lived experience of multilingualism by autistic children and their carers and then I will report on a systematic meta-analysis of the emerging literature which reveals that multilingualism has no adverse effect on the linguistic and cognitive development of children with autism. Moreover, I will outline in what ways multilingualism may actually be beneficial for autistic children and report some unpublished trends in recent work with colleagues. The interplay of qualitative and quantitative methods and the benefits of participant-informed research will set the background for this presentation.

**18.05.21**

**Marco Calabria** (Open University of Catalonia): How is cognitive neuropsychology contributing to bilingualism research?

**Abstract**

Neuropsychology may contribute to bilingualism research from a multidisciplinary perspective that includes psycholinguistics and brain imaging studies. On one side, the psycholinguistic approach offers the advantage of guiding the experimental study of linguistic processes in patients with brain damage. On the other, neural models define the underlying brain areas of such processes and help to predict language deficits in patients. However, neural models of bilingualism do not provide accurate predictions about brain damage because they have not been tested with patient data in a systematic way. Nevertheless, they offer the roadmap of the underlying cognitive and linguistic processes of bilingual language control and speech production that are mostly based on findings from healthy individuals. In this talk, I propose how the neurolinguistic approach to bilingualism may be implemented, by including: a) the extension of traditional cognitive neuropsychology to bilingualism, b) the use of psycholinguistic methods in neuropsychology, and c) how neurodegenerative diseases may be a neuropsychological paradigm to study language in bilingualism.

25.05.21

**Jia'en Yee** (University Putra Malaysia): Multilingualism effects on brain structure

### **Abstract**

A growing body of research has suggested that the acquisition and processing of a second language leads to structural changes in the brain (Hayakawa & Marian, 2019; Pliatsikas, 2019). However, the trajectory and limits of these adaptations remain unclear, particularly so with increasing language experience and expertise such as the acquisition and processing of a third or fourth language. This talk highlights the structural adaptations relating to bilingualism and reviews the available evidence in the effects of multilingualism. Parallels and contrasts will be drawn between bilingualism and multilingualism using theoretical frameworks like the Dynamic Restructuring Model (Pliatsikas, 2020). Finally, some fresh evidence from monolinguals, bilinguals and multilinguals will be presented to show the dynamic process of subcortical restructuring, and more specifically demonstrate the concept of structural renormalisation with increasing language experience.

01.06.21

**Maren Eikerling** (IRCCS Eugenio Medea): Computerized bilingual screenings of Developmental Language Disorder and Developmental Dyslexia in bilingual children

### **Abstract**

Distinguishing Developmental Dyslexia (DD) or Developmental Language Disorder (DLD) in bilinguals from variation in language acquisition due to heterogeneous language input challenges clinicians (Grimm & Schulz, 2014). To reliably identify the risk of DLD/DD in bilingual children, both languages spoken should be assessed (see Position Paper MULTI-SLI, 2015). This can be done through computerized screening tasks that are automatically administered in both languages while accuracy and speed are measured (cf. Bigagli & Lorusso, 2014). The MuLiMi web-application has been developed with this aim, in a collaboration between IRCCS Medea and Politecnico di Milano, within the MultiMind project. Current projects related to MuLiMi focus on a) the evaluation of user-friendliness of the web-application and b) evaluation of its diagnostic accuracy through analyses of the correlations with results in standardized tests and of its capacity to discriminate between typical and atypical development (as emerging from formal diagnoses with the help of parental questionnaires). The child's performance is automatically evaluated and measured based on response times and accuracy. Among others, screenings for Italian children living in Germany aged 4 to 6 (study 1 on DLD risk) and for 7-9-year-old children (study 2 on DD risk) were created using language-specific and language-universal clinical markers. Based on these, Italian and German screening tasks were implemented on MuLiMi. Additionally, standardized German tests (using bilingual norms where available) were administered.

Furthermore, parents as well as Speech and Language Therapists or teachers filled in questionnaires on the child's (language) development. Preliminary results show convergent information from performances in experimental and standardized tests. Platform features, screening contents and preliminary results will be presented. Implications regarding the potential reduction of misdiagnoses as well as limitations concerning the testing modalities will be discussed.

## 08.06.21

**Johanne Paradis** (University of Alberta): Bilingual development in first generation Syrian refugee children: What factors contribute to successes and challenges?

### **Abstract**

The number of refugees worldwide is the highest ever recorded and over half are children (UNHCR, 2017). Children from refugee families can have experiences that set them apart from other migrant children, e.g., interrupted schooling, witnessing and being the victims of violence, loss of and separation from family members, displacement and frequent transitions, residing in refugee camps or detention centres (Graham et al. 2016; Sirin & Rogers-Sirin 2015; Kaplan et al. 2016). Post-migration, refugee families can also face economic and social integration difficulties and many child refugees struggle with socioemotional wellbeing and mental health postmigration (Bronstein & Montgomery, 2011; Stewart et al., 2019). Such adverse experiences could well impact these children's development of both their first language (L1) and their second language (L2). For example, interrupted schooling could result in lower than age-expected abilities in the L1. In addition, since mental distress interferes with cognitive functioning and learning (Yasik et al., 2007), it could, in turn, interfere specifically with language learning. To date, little research has focused on the bilingual development in refugee children separate from other populations of bilingual children. Furthermore, while much recent research has focused on sources of individual differences in bilingual development such as, age, cognitive and input factors (Chondrogianni, 2018; Paradis, 2016; Unsworth, 2016), very little research has examined the influence of wellbeing and adversity factors in particular. In this talk, I will present research from a longitudinal study on the bilingual development of Syrian refugee children recently arrived in Canada. The focus will be on sources of individual differences in their Arabic-L1 and English-L2 development, including age of arrival, quality and quantity of input/output, parental education, family size, as well as pre-migration adversity factors and concurrent socioemotional wellbeing. The influence of these factors on children's lexical, morphosyntactic and narrative abilities in both languages across time will be discussed. The overall goal of the talk is to reveal what poses challenges to these children's dual language development as well as what underlies their successes. The educational and clinical implications of this research will be discussed.

## 15.06.21

**Dávid György** (University of Geneva): Rhythmic priming of syntactic processing: a common structure?

### **Abstract**

Recent empirical evidence has shown several correlations between language and musical rhythm processing in typical and atypical populations (Corriveau & Goswami, 2009; Friederici et al., 2003; Gordon et al., 2015a). One line of studies has reported improved syntactic processing following exposure to a rhythmically regular musical prime compared to an irregular musical prime, environmental noise, or silence (Bedoin et al., 2016; Canette et al., 2020, Chern et al., 2018; Przybylski et al., 2013). However, it cannot be ruled out that part of this rhythmic priming effects lies in a disruption from the irregular rhythm rather than a pure facilitatory effect of the regular rhythm as, to our knowledge, no studies have compared an irregular prime with a baseline condition. The present study aimed to directly compare the effects of regular and irregular primes as well as a silent baseline on syntactic processing. In two experiments, French-speaking typical adults underwent rhythmic priming and completed a grammaticality judgement task in a semi-artificial Jabberwocky language. In both experiments, results showed that rhythmic priming can influence syntactic processing, though only in the first three sentences after a prime rather than six sentences as usually reported for natural language stimuli. Experiment 1 showed a disadvantage of the irregular condition compared to the regular and silence conditions. However, the block design of this experiment may have confounded our findings. Experiment 2 sought to remedy this by using a mixed design. Results showed higher grammaticality judgement accuracy in the regular than in the irregular condition, with a marginal advantage of regular over silence. Furthermore, grammaticality judgement accuracy correlated with performance in a rhythm discrimination task, while participants' ability to anticipate a metronome beat showed a relationship with the number of languages they spoke. These findings are discussed in the frameworks of Dynamic Attending (Large & Jones, 1999) and hierarchical structure building in musical rhythm and language processing (Fitch & Martins, 2014; Heard & Lee, 2019).