Multilingual and social experience: The Systems Framework of Bilingualism

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Communication is a ubiquitous experience for humans, from childhood to older age, and we communicate using language to accomplish our social goals. Traditionally, cognitive and linguistic studies of multilingualism have used an individual's linguistic experiences as predictors for his or her behavior. However, with an increasingly multilingual population around the world, we also need to recognize the social implications when characterizing and quantifying bilingual and multilingual experience.

To do so, we present in this issue the Keynote article by Titone and Tiv (2023) "Rethinking multilingual experience through a Systems Framework of Bilingualism" in which the authors introduce a comprehensive socially-situated Systems Framework of Bilingualism aimed at understanding the complex role of the sociolinguistic context for people's language use, development, and cognition. The importance of social experience is recognized by many linguists and linguistic subdisciplines – however, it is less apparent within the study of adult psycholinguistics and the cognitive neuroscience of multilingualism. Indeed, mainstream psycholinguistics' attention is usually directed towards individuals, their language representations or processes, and their domain-general cognitive capacities that intersect with language. The framework illustrated here by Titone and Tiv (2023) takes a novel multi-level approach to capture and describe language experience, and, as we strongly believe, represents a key step forward in characterizing and quantifying bilingual experience, and how this may be leveraged to examine neurocognitive outcomes. As the authors of the keynote article state, their primary goal is a "call to action" for scientists to embrace sociolinguistic and sociocultural experiences more fully as part of their theoretical and empirical purview, and in order to provide a socially informed scientific understanding of multilingual experience.

Seven experts representing different fields of research and different views on the topic commented on Titone and Tiv's keynote article. Caldwell-Harris (2023) makes the case that further longstanding questions would also benefit from being incorporated into a multicausal, dynamic framework such as the illusion of causality that has obscured the relationship between age and L2 ultimate attainment. Further, Caldwell-Harris (2023) underlines that a systems framework can prevent wrong decisions in language policy, as in the case of profoundly deaf individuals growing up without an accessible language. DeLuca (2023) agrees that bilingual experience is truly a multidimensional spectrum with a number of experiences that condition its outcomes. However, he emphasizes that neurocognitive adaptations to these experiences are also a multidimensional spectrum and these too need to be better linked to the dynamics of bilingual language experience. Ellis (2023) praises the messages the keynote article is conveying and reminds us that it was only natural that, from their beginnings, both neuroscience and cognitive psychology prioritized looking inwards for their answers. As Ellis states: "In so doing, they ignored at their peril the advice of ecological psychologists to 'ask not what's inside your brain – ask what your brain is inside of'". Genesee (2023) agrees on the importance of sociolinguistic and sociocultural experiences, and highlights that no stronger case for such a system framework can be found than in studies of developmental aspects of bilingualism. This latter fact has also been underlined by Gullifer and Anderson (2023), who mentioned that a systems framework has been previously proposed and applied to bilingualism but has largely been contained within the developmental literature. It is thus novel to consider applying this approach to the entire field of bilingualism and bilingual experience, with a focus on viewing the multilingualism within the social context. Interestingly, Gullifer and Anderson (2023) also discuss methodological and analytical challenges of the proposed approach and present possible solutions such as i) defending the approach against simplistic stories; ii) collecting and curating complex data; iii) and analyzing complex datasets. Along similar lines, Luk and Grundy (2023) add to the discussion by reinforcing Titone and Tiv's (2023) position, pointing to two further aspects to be considered: i) bilingual experience is interactional; and ii) outcomes of comparing monolinguals to bilinguals will vary across contexts. Finally, Kroll, Chan, Cheng, and Scontras (2023) remind us of a very important aspect that has been not discussed in depth in the keynote article: bidirectionality. Indeed, Kroll et al. (2023) make the point that not only do the findings from psycholinguistics and neurolinguistics need to be placed in a social context, but they need to be understood as holding important consequences for sociolinguistic

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approaches. This point is discussed by Titone and Tiv (2023b) in their response to the commentaries, along the discussion of the other points raised by our commentaries. Importantly, in their response Titone and Tiv (2023b) present us with an updated model based on the comments received, demonstrating how science is dynamic as an collaborative effort when placed in a right social interactive context, as in this issue of our journal!

We hope that our readership will enjoy this stimulating discussion and we would like to conclude by citing Titone and Tiv (2023), who "*hope that the Systems Framework of Bilingualism offered here, while preliminary and not perfect, can help us all think more concretely and pragmatically about how to pose and answer psycholinguistic questions about language that are inclusive to diverse sociocultural realities*".

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