Bilingualism: Language and Cognition

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How to frame bilingualism in context: Putting people and places in mind

Judith F. Kroll[1], Ariel Chan[2], Andrew Cheng[3] and Gregory Scontras[4]

[1]School of Education, University of California, Irvine, USA; [2]Department of Asian Languages and Cultures, University of California, Los Angeles, USA; [3]Department of Linguistics, Simon Fraser University, Burnaby, B.C., CA and [4]Department of Language Science, University of California, Irvine, USA

Peer Commentary

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Address for correspondence:
Judith F. Kroll,
Email: Judith.kroll@uci.edu

Research on bilingualism has always lived in a tense intersection across disciplines that vary in the lenses they bring to language experience and in how that experience is placed within minds and across social experience and political realities (e.g., García, Flores, Kate Seltzer, Wei, Otheguy & Rosa, 2021). What has changed? In the last two decades, there has been an explosion of research on how the mind and the brain are altered by the use of two or more languages. The history of this journal itself documents many of those developments. The tools of neuroscience have come to the table to reveal new insights about how languages are learned (e.g., Tanner, McLaughlin, Herschensohn, & Osterhout, 2013), how brains change as a result (e.g., Pliatsikas, 2020), and how learners come to use the languages to which they have access in ways that reveal new insights about their role in human interaction (e.g., Gullifer & Titone, 2020). But these interactions have been also examined for a long time from many different perspectives. Linguistic analyses have asked how variation in early language experience among heritage bilinguals creates distinct grammatical signatures (e.g., Polinsky & Scontras, 2020). Sociolinguistic perspectives have focused on a range of phenomena that characterize bilingual experience: for example, what bilinguals' code-switching practices reveal about their perceived group and ethnic memberships (e.g., Auer, 2013; Wei & Milroy, 1995); how bilinguals' perception of accentedness is affected by their own language experience (e.g., Campbell-Kibler, 2012); or how bilinguals' production of English sounds is impacted by their ethnic orientation and language environment (e.g., Nagy, Chociej & Hoffman, 2014). What has changed more recently is the recognition that we need new ways to understand the relation across these endeavors, which have been conducted largely independently of one another. This keynote article by Titone and Tiv (2022) is an ambitious attempt to bring these perspectives together. We welcome the opportunity to discuss this effort because we share the belief that advancing our understanding of bilingualism requires taking a broad and integrated view.

In this commentary we focus on a set of issues raised by this keynote article, acknowledging with humility that there are many different points of departure in this discussion. One reaction is that the proposal offered here is a bit too ambitious and spread too thin in scope, making it difficult to develop a research agenda that adequately prioritizes the dimensions that are represented in the framework shown in Figure 1 in the keynote article. But another is that it is not ambitious enough, in the sense that some big issues have not been addressed in ways that might identify the steps that need to be taken to advance the research agenda, particularly with respect to bringing very different research traditions together. In the brief comments that follow, we attempt to illustrate each of these points. We do so around three particular issues: 1) the model does not adequately account for identity; 2) the model does not sufficiently address bidirectionality, in the sense that sociolinguistics can also benefit from cognitive/psycholinguistic approaches; and 3) the model relies heavily on quantitative methods without acknowledging the contribution of qualitative approaches.

The issue of identity

We worry that Titone and Tiv's Systems Framework might need to be amended to recognize the central role that speaker identity plays in accounting for the variation observed in language behavior – a lesson learned from decades of sociolinguistic research. Given the nested nature of the Systems Framework (as depicted in Figure 1), one might conclude that interpersonal or ecological factors have a more direct impact than societal ones on the individuals involved. But societal factors impact (perceived) identity, which in turn affects how (bilingual) speakers use their language(s); likewise, how speakers use their languages may have profound effects on their identity (Bucholtz & Hall, 2005). We know from studies of heritage bilinguals who are also ethnic minorities in English-dominant societies such as the United States that personal identity plays a central role in how multilingual speakers use their languages, and vice versa: a speaker's language behavior affects their sociocultural identity (He, 2006; Lee, 2002; Leeman, 2015). From our perspective, real progress on understanding the seeming noisiness of bilingual language and brain data requires a better understanding of the speakers involved and the pressures that shape their identities. In other words, a synthesis of the type called for by Titone and

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Tiv will require making use of deep ethnography and qualitative analysis of both speaker identity and interactional context.

On the bidirectionality of cross-disciplinary research

As the preceding discussion illustrates, the authors focus primarily on what cognitive and neuroscientific approaches to bilingualism stand to gain from incorporating sociolinguistic perspectives. While we do not disagree that much stands to be gained, we believe that the benefit flows in the other direction as well: to sociolinguistic approaches from the incorporation of cognitive and neuroscientific perspectives. This bidirectional influence cannot be neatly placed into any of the spheres, as it pertains to the ego's interaction with all of the spheres at all times. From some sociolinguistic perspectives, laboratory research has been considered reductionistic and artificial, with little ecological validity or relevance (e.g., the García et al., 2021 paper we cite at the start is an example). In our view, 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 approaches.

Research on the role of interactional context for bilingual language use (e.g., Beatty-Martínez et al., 2020) and on the neural processes underlying language experience (e.g., Pliatsikas, 2020) illustrate the ways that the minds and brains of individuals living in different communities may change dynamically. Beatty-Martínez et al. showed that native speakers of Spanish, who are all highly proficient in English, engaged cognitive resources differently as a function of whether the two languages were used opportunistically or competitively. Critically, it is not only a matter of community identity and geographical location. Bilinguals with the same history of acquisition and cultural experience appear to change the way they engage cognitive and neural resources when the opportunities for using the two languages change. Those changes do not reflect instability. Instead, they demonstrate dynamic adapation to the interactive demands present in the environment. Those adaptations can be tracked long term over the lifespan and also short term as the immediate demands on speakers require adjustment. Understanding these consequences will be important for modeling the ways that sociolinguistics has characterized language. It is clear that there are a range of consequences for the mind and the brain that reach beyond language use itself to affect the way that speakers interpret the world around them. Another illustration can be seen in what has been called the "foreign language effect" whereby bilinguals differ in how likely they are to adopt rational strategies in decision making depending on the language they are speaking (e.g., Keysar, Hayakawa, & An, 2012). One implication is that the same bilingual speakers, placed in environments that differ in the language of the community, may function in ways that change the way they are characterized. Although there is much that is unknown about how these effects arise, it seems important to ask how the emerging evidence on the cognitive and neural adaptions of bilingualism, something that has been investigated at a different level and on a very different timescale, might be synthesized with what we have learned from sociolinguistic approaches.

Methodological obstacles to a cross-disciplinary synthesis: The role of qualitative methods

An impediment to developing a truly bidirectional transdisciplinary approach is that different methods have historically been used in sociolinguistics and in psycholinguistics. A recent development in psycholinguistics is to characterize the social networks that Titone and Tiv (2022) describe, using survey methods that provide summary statistics (e.g., measures of language entropy) on the diversity of language use for bilingual speakers who find themselves in linguistic environments that differ in the opportunities to use each of their languages. But questionnaire data provide only one source of information. While questionnaires are an efficient way for collecting quantitative, self-reported ethnographic data, we suggest that this approach does not offer a genuine integration of the sociolinguistic and psycholinguistic approaches. A genuine bidirectionality requires more than a sampling of methods that have been developed on each of the sides of bilingualism research, and cross-disciplinary research requires an integration of perspectives from other subdisciplines beyond putting numbers obtained from the questionnaires into a statistical model. One direction to consider is the use of qualitative methods (e.g., collecting conversational and interview data) to measure sociolinguistic variables in a more nuanced manner: in particular, variables that are sensitive to the contextual factors (e.g., ethnic identity, interactional context). Sociolinguistic studies have identified the impact of ethnic identity on language production in conversational and interview data that is otherwise not found in questionnaire data (e.g., Hoffman & Walker, 2010; Thepboriruk, 2015; Zipp & Staicov, 2016). Bilinguals' speech patterns and word choice in interview data may better characterize their identity when we consider how their experience impacts the way they use their two or more languages.

It is beyond the scope of this brief commentary to address the history and philosophy of science, but to achieve genuine bidirectionality will require more than a sampling of alternative methods. Each of the subdisciplines that examines bilingualism does so with a different set of prescriptive tools. To pursue transdisciplinary research that integrates other perspectives deeply will require exceptional collaborations. Language scientists of different persuasions are beginning to talk to one another (e.g., Kroll, Lamar Prieto, & Dussias, 2021). Those conversations are taking first steps that will produce many rich new directions for the future research agenda. We see the discussion around the issues raised by this keynote article as important input to this process.

Competing interests. The authors declare none.

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