

## INTRODUCTION

# Translating Research to Practice in the Language Sciences

Daniel J. Weiss and Federica Bulgarelli  
Pennsylvania State University

Christian Navarro-Torres  
University of California, Riverside

Julia Morales  
Universidad Loyola Andalucía

Because without our language, we have lost ourselves.  
Who are we without our words?

—Melina Marchetta

Language is one of the defining features of humankind. Unlike the communication systems found in our primate relatives, language is an open, flexible system whose acquisition spans years rather than consisting of a fixed repertoire mostly available from birth. Language emerges from the interplay between complex neural circuits and an environment that is sufficiently rich linguistically to afford learning. This emergent property of language carries some cost, however, and unlike other primate communication systems (e.g., Owren, Dieter, Seyfarth, & Cheney, 1993), reaching full proficiency is not guaranteed. Biological impairments, both temporary and lasting, may have a profound impact on language acquisition and use (see Hoff, 2013). Likewise, language relies on a suite of general cognitive abilities, for instance working memory and joint attention (e.g., Tomasello,

Carpenter, Call, Behne, & Moll, 2005), such that deficiencies in those domains lead to sub-optimal language outcomes (e.g., Gillam, Montgomery, & Gillam, 2009). Beyond these characteristics of language users, the linguistic environment itself must support learning. This is perhaps the most contrastive feature relative to other primate systems, as impoverished language input can ultimately limit the attainment of full proficiency (e.g., Hart & Risley, 1995; Hoff & Naigles, 2002; Fernald, Marchman, & Weisleder, 2013). Given the importance of language proficiency for psychological well-being (e.g., Peterson, Bates, & Staples, 2015; Roben, Cole, & Armstrong, 2013), cognitive development (e.g., Leonard et al., 2007), and academic success (e.g., Hoff, 2013), there is a pressing need for translational approaches to language science as a means for promoting positive language outcomes.

There are at least two important goals for translational research in the language sciences: ameliorating the deficits arising from atypical development or brain trauma and also promoting positive outcomes for typically developing learners of all ages. While the application of translational research for atypical trajectories may feel rather intuitive, its role for typically developing populations has been somewhat underappreciated up until the past several decades. Perhaps the clearest example of the importance of translational work for typically developing learners is the wealth of research that has clearly demonstrated the importance of the richness of the language environment, in both the home and the classroom, for developing strong language skills in children (e.g., Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002). Developing effective interventions, in homes and schools, is critical for beginning to level the playing field for

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*Editor's Note.* This is an introduction to the special issue "Translating Research to Practice in the Language Sciences." Please see the Table of Contents here: <http://psycnet.apa.org/journals/tps/3/1/>. —MBK

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Daniel J. Weiss and Federica Bulgarelli, Department of Psychology and Program in Linguistics, Pennsylvania State University; Christian Navarro-Torres, Department of Psychology, University of California, Riverside; Julia Morales, Department of Psychology, Universidad Loyola Andalucía.

Daniel J. Weiss served as special issue editor, and Federica Bulgarelli, Christian Navarro-Torres, and Julia Morales were associate editors.

Correspondence concerning this article should be addressed to Daniel J. Weiss, Department of Psychology, Pennsylvania State University, Moore Building, University Park, PA 16802. E-mail: [djw21@psu.edu](mailto:djw21@psu.edu)

disadvantaged children receiving impoverished input. Similarly, bilingual language acquisition has been another critical area for translational research. For many years, a stereotype has persisted suggesting that exposing children to multiple languages causes confusion (e.g., [Volterra & Taeschner, 1978](#)), leading to delays in both the acquisition of and proficiency in each language (see [Moll, 1992](#)). This stereotype has significantly impacted education policies that persist in relating to bilingualism with a deficit orientation (e.g., [Crawford, 1999](#); [Souto-Manning, 2006](#)). However, basic science research suggests that bilingual children acquire language on a similar schedule as monolinguals (e.g., [Ramírez-Esparza, García-Sierra, & Kuhl, 2016](#)). Moreover, many studies point to the cognitive benefits of bilingualism that extend beyond just knowing two languages (e.g., [Bialystok, 2007](#); [Genesee, Nicoladis, & Paradis, 1995](#)). Given the discrepancy between these findings and the long-held stereotypes, basic science needs to bridge to practice and inform the development of public policies and curricula related to bilingualism.

The planning of this special issue was facilitated by ideas that were discussed at a workshop held by Penn State's Center for Language Science in February 2015 and supported in part by a grant from National Science Foundation's (NSF's) Science of Learning Centers Program to Penn State's NSF Partnerships in International Research and Education project (Bilingualism, Mind, and Brain: An Interdisciplinary Program in Cognitive Psychology, Linguistics, and Cognitive Neuroscience) and by Penn State's College of Liberal Arts. The goal of the workshop was to bring together an international group of scholars to share effective strategies for bridging basic science approaches to language learning with practical implementations in homes, schools, public policy, and other applications. The workshop participants spanned multiple disciplines within language science, including linguistics, psychology, neuroscience, and education. During the development of the workshop, we approached *Translational Issues in Psychological Science (TPS)* as an outlet for this special issue because the mission of the journal closely aligned with the goals of the workshop. This special issue sought to broaden participation beyond those in attendance at the workshop while also extending the range of topics. In our solicitation of articles for this issue, we

purposefully sought a wide range of content topics, approaches, and translational contexts.

Accordingly, the content of this issue spans many methods for translating language science research to practice. In the domain of typical child development, this includes educational interventions for promoting positive language outcomes through principles discovered in basic science research ([Hassinger-Das, Toub, Hirsh-Pasek, & Golinkoff, 2017](#)), as well as exploring how interactional styles between caregivers and infants may impact language development ([Renzi, Romberg, Bolger, & Newman, 2017](#)). In the realm of bilingualism, new proposals for pedagogical strategies are presented, challenging existing educational practices based on relevant findings from psycholinguistic approaches ([Mallikarjun, Newman, & Novick, 2017](#)). The impact of second language proficiency on legal and medical interactions is also considered, with an eye toward reducing bias ([Itzhak, Vingron, Baum, & Titone, 2017](#)). The one empirical study in this special issue explores how new technologies can be leveraged to assist at-risk dual-language learners with reading comprehension ([Walker, Adams, Restrepo, Fialko, & Glenberg, 2017](#)). This issue also addresses atypical development, such as applying insights from developmental psychology and psycholinguistics to improve detection and possible remediation of conditions such as pediatric hearing loss ([Morini, Golinkoff, Morlet, & Houston, 2017](#)) and autism spectrum disorder ([Tek & Naigles, 2017](#)). Finally, this issue also includes an article translating recent insights from neuroanatomical and neurophysiological research to provide recommendations for treating traumatic brain injury, which can cause deficits in language for both children and adults ([Stockbridge & Newman, 2017](#)).

One of the very unique features of *TPS* is its emphasis on involving graduate students and postdocs in all phases of production, from participating in writing manuscripts, to reviewing submissions, and even assuming roles as associate editors. This spirit of inclusiveness (also a theme of the aforementioned workshop) has provided invaluable opportunities for professional development. For some students, it provided a first opportunity to review a manuscript; for authors, it was an opportunity to meaningfully engage in a position paper; and for associate editors, it provided a glimpse into the entire process of

publishing at a much earlier stage than is typical. Moreover, by including students and postdocs in all phases of production of this issue, the journal has helped transmit the need for translational research in this field to the next generation of scientists. We hope the readers of this issue become similarly aware and inspired to help fill the gaps.

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