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The persistent sampling bias in developmental psychology: A call to action

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ABSTRACT

Psychology must confront the bias in its broad literature toward the study of participants developing in environments unrepresentative of the vast majority of the world's population. Here, we focus on the implications of addressing this challenge, highlight the need to address overreliance on a narrow participant pool, and emphasize the value and necessity of conducting research with diverse populations. We show that high-impact-factor developmental journals are heavily skewed toward publishing articles with data from WEIRD (Western, educated, industrialized, rich, and democratic) populations. Most critically, despite calls for change and supposed widespread awareness of this problem, there is a habitual dependence on convenience sampling and little evidence that the discipline is making any meaningful movement toward drawing from diverse samples. Failure to confront the possibility that culturally specific findings are being misattributed as universal traits has broad implications for the construction of scientifically defensible theories and for the reliable public dissemination of study findings.

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Introduction

Growing attention has been drawn to the lack of diversity in psychological testing, in particular to the fact that the vast majority of psychological research has been conducted on populations that are unrepresentative of human culture more globally—those from WEIRD (Western, educated, industrial, rich, and democratic) backgrounds (Henrich, Heine, & Norenzayan, 2010; Legare & Harris, 2016; Nielsen & Haun, 2016). The dearth of systematic research outside of Western cultural contexts is a major impediment to theoretical progress in the psychological sciences (Legare & Nielsen, 2015; Rowley & Camacho, 2015). Where psychological researchers assume that data are not specific to the sample of participants under direct test (i.e., that findings are generalizable), lack of attention to cultural variation and its psychological consequences risks yielding incomplete, and potentially inaccurate, conclusions (e.g., Apicella & Barrett, 2016; Evans & Schamberg, 2009; Mani, Mullainathan, Shafir, & Zhao, 2013; Votruba-Drzal, Miller, & Coley, 2016).

A complete understanding of the ontogeny and phylogeny of the developing human mind depends on sampling diversity (Clegg & Legare, 2016; Herrmann, Call, Hernandez-Lloreda, Hare, & Tomasello, 2007; Machluf & Bjorklund, 2015; Nielsen, 2012; van Schaik & Burkart, 2011). Where research efforts are focused on identifying core mechanisms or universal aspects of psychology, failure to acknowledge the possible impact of environment on the behavior of participants must be considered at best neglectful and at worst bad science. Our aim here is to show, presenting new data, that the influence of culture—"a set of meanings or information that is non-genetically transmitted from one individual to another, which is more or less shared within a population (or a group) and endures for some generations" (Kashima & Gelfand, 2012, p. 640)—is not afforded sufficient attention in the developmental literature. Moreover, despite growing awareness of a need to change, we show that there is little shift in research practices that overly rely on data from a markedly narrow sample pool and little acknowledgment that this is potentially problematic for interpreting data and arising theoretical assumptions.

From the limited research that exists, there is clear evidence of substantial differences between Western educated industrialized communities and non-Western populations in fundamental aspects of child development (Bornstein, 1991; Corsaro, 1996; Gaskins & Paradise, 2010; Kruger & Tomasello, 1996; Lave & Wenger, 1991; LeVine, LeVine, Schnell-Anzola, Rowe, & Dexter, 2012; Miller & Goodnow, 1995; Rogoff, 2003). This includes evidence for cross-cultural variation in child socialization and how parents interact with their infants (Keller, 2007; Keller & Kärtner, 2013; Kärtner, 2015), the kinds of tasks parents engage their infants in (Cole, 1996; Lancy, Bock, & Gaskins, 2010), and the amount of time children spend with nonparental caregivers and peers (Gaskins, 2006; LeVine, 1980). For example, there is cultural variation in the degree to which mothers focus on face-to-face interaction and object play when engaging their infants that leads to culture-specific maternal reactions to infants' communicative signals (Keller et al., 2004; Kärtner, 2015; Little, Carver, & Legare, 2016).

Cultural variation has also been documented in other fundamental aspects of human cognition (Wang, 2017). For example, Haun, Rapold, Call, Janzen, and Levinson (2006) found that Hai//om children tend to employ a geocentric search strategy (where the position of relevant items is maintained relative to the larger surrounding environment) to find something hidden among an array of overturned cups, in contrast to the egocentric approach (where the position of relevant items is maintained relative to the viewpoint of the children) adopted by Western children. Our aim here is not to dwell on culturally determined differences in children's developmental environments but rather to draw attention to interpretation and the assumptions that would be made without consideration of potential cultural influences. If Haun and colleagues had tested only Western children, then it could have easily been assumed, as is typically written, that "children" employ egocentric search strategies. But "children" generally do not do so; only children from specific cultural backgrounds do.

Critically, there is no universal developmental context in which children grow up, nor is there a universal environment for the human mind. To understand psychological processes, thus, it is necessary to exercise caution when generalizing beyond the specific sociocultural context at hand (Clegg, Wen, & Legare, 2017). To reiterate, if an underlying goal of any research endeavor is to identify globally relevant patterns of development—and not patterns that are specific to one population in isolation—then failure to acknowledge the possible influence of cultural factors on participants' responses is