

Introduction to the ontogeny of cultural learning

In press, *Child Development*

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Citation: Legare, C.H. & Harris, P.L. (2016). Introduction to the ontogeny of cultural learning. In C.H. Legare & P.L. Harris (Eds.). The ontogeny of cultural learning. [Special Section]. *Child Development*.

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Acknowledgements. Writing of this manuscript was supported by a Large Grant from the Economic and Social Research Council (REF RES-060-25-0085). We are grateful to the many authors and reviewers who contributed to this special section.

Abstract

Developmental research has the potential to address some of the critical gaps in our scientific understanding of the role played by cultural learning in developmental outcomes. The goal of this special section was to gather together leading examples of research on cultural learning across a variety of cultural contexts and caregiving settings. Although the field of developmental psychology continues to struggle with the persistent problem of oversampling U.S. and Western European populations, we argue that the papers in this special section add to the growing evidence that children everywhere draw on a repertoire of cultural learning strategies that optimize their acquisition of the specific practices, beliefs, and values of their communities. We also indicate new questions highlighted in the special section and outline best practices for the conduct of research on cultural learning.

Keywords: cognitive development; cross-cultural research; cross-cultural psychology; cultural learning; developmental psychology; social cognition; socialization; social learning

The ontogeny of cultural learning

Human cross-cultural variation is unique in both its extent and structural complexity. As compared to any other species, we have a range of socially acquired behaviors that vary dramatically across communities (Haun, 2015; Konner, 2010; Pagel & Mace, 2004). If our propensity for cultural learning lays the foundation for transmitting the distinctive behaviors of a particular community, then that propensity is likely to be equivalent across populations, yet sensitive to human cultural variation.

As cultural novices, children must acquire the practices and beliefs of the group they are born into. By implication, the human propensity for culture encompasses a flexible and receptive response to diverse ontogenetic contexts and cultural ecologies. If we are to better understand both the stability and the variability of cultural learning, we must conduct research on childrearing environments and practices across diverse populations. It is not sufficient to conduct cross-cultural research with adults. Such research can illuminate the diversity and stability of human cultural arrangements but it offers little insight into the developmental origins of that diversity and stability (Nielsen & Haun, 2016).

The technological advances that characterize humans are an outcome of our species' remarkable capacity for cumulative culture, widely recognized as one of the most important contributors to our dispersal across the planet (Boyd, Richerson, & Henrich, 2011; Henrich, 2015; Pagel, 2012; Whiten & Erdal, 2012). If cultural diversity is to be maintained across different groups, then group-specific skills and cultural conventions need to be transmitted to future generations with high fidelity. At the same time, innovation is also necessary to ensure cultural adaptation to new environments and

ecological challenges over time. In cumulative culture, imitative fidelity and innovation work in tandem to generate ever more sophisticated behavioral repertoires (Legare & Nielsen, 2015). Central to this process is our capacity and propensity for cultural learning – for learning that is based not on direct encounters with the natural world but on interaction and communication with other people, especially with other members of our cultural group (Tomasello, Kruger & Ratner, 1993). Indeed, when we learn from others, we not only acquire the practical skills of our cultural group, we also acquire its beliefs, norms and rituals (Tomasello, 2016).

The goal of this special section was to gather together leading examples of research that explores cultural learning in childhood across a variety of cultural contexts and caregiving settings. Granted that cultural learning is an increasingly important, interdisciplinary focus of research, we encouraged the submission of original theoretical and empirical research papers from a variety of disciplines – including developmental and cultural psychology, biology, social and evolutionary anthropology, and education – with the goal of facilitating cross-fertilization within and across these disciplines. We also sought international research using innovative developmental, cross-cultural, and mixed-methodological approaches.

In this introduction, we begin by presenting evidence that in one important respect developmental psychology suffers from the same limitation as the broader field of psychology. It struggles with the problem of oversampling populations from U.S. and Western European populations. Nevertheless, the papers in this special section add to the growing evidence that children everywhere draw on a repertoire of cultural learning strategies that optimize their participation in and acquisition of the particular practices,

beliefs, and values of their community. We also indicate some of the novel questions addressed in this special section and conclude by describing future best practices for the conduct of research on cultural learning.

Research in developmental psychology remains WEIRD.

Despite the remarkable variation in human culture, both across the globe and across historical time, many studies in psychology include participants who are unrepresentative of human culture, both globally and historically, notably those from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) backgrounds (Henrich, Heine, & Norenzayan, 2010). In 2008, Arnett analyzed papers published from 2003-2007 in top journals from six subdisciplines of psychology, revealing that 96% of the participants were from Western countries (68% from the U.S. alone) and 99% of first authors were at universities in Western countries (73% from the U.S.). Taking into account population size, this meant that 96% of the participants came from countries with only 12% of the world's population.

Such narrow sampling would be unproblematic if psychological findings were robust across different cultural settings. Cross-cultural research frequently identifies continuity in fundamental aspects of social cognition. For example, Wente et al. demonstrated continuity in children's understanding of free will in the U.S. and China. Children in both populations recognized that if a physical restriction were involved, a person's freedom to choose would be constrained: someone could not just choose to walk through a wall. To varying degrees, children also recognized that if a psychological restriction were involved, a person's freedom to choose would not be not so constrained – they could choose to override this desire.

A large variety of psychological processes have turned out to display considerable variation across different cultural settings, including those that might appear to be good candidates for cross-cultural stability, notably basic perceptual, encoding and cognitive processes (Henrich et al., 2010). There is also evidence for substantial variation in norms and expectations for social interaction. For example, Zeidler et al. examined resource distribution and turn-taking among German, Samburu, and Kikuyu 5- to 10-year-olds. Almost all German pairs solved the problem of equal resource allocation by taking turns immediately. In the other groups, however, one child usually monopolized the resource in trial one and sometimes let her partner monopolize it in round two, often resulting in an equal distribution. By implication, equitable turn-taking is not a natural strategy appearing uniformly across human cultures; different cultures use it to different degrees and in different contexts.

Cultural variation is not limited to expectations for social interaction, there is also evidence for cultural variation in other kinds of social norms, such as modesty. Fu, Heyman and Lee examined how 7-11-year-old children in China and Canada communicate about their own good deeds. Children cleaned a teacher's messy office in her absence, and their responses were observed when the teacher returned. Only the Chinese children showed an age-related increase in modesty by choosing to falsely deny their own good deeds. In sum, although the evidence for cultural variation in basic and social processes is mounting, the sum total of data from cross-cultural research pales in comparison to data from research with WEIRD populations.

This dearth of systematic research outside of Western cultural contexts presents an impediment to theoretical progress in the psychological sciences in general (Mesoudi,

Chang, Murray, & Lu, 2015). However, it poses a special impediment to the developmental sciences in particular because, as we describe in more detail below, it is important to assess the extent to which children everywhere draw on the same repertoire of cultural learning strategies (Callaghan et al., 2011; Kruger, 2011; Little, Carver, & Legare, 2016; Nielsen & Haun, 2016; Nielsen & Tomaselli, 2010; Shneidman, Gaskins, & Woodward, 2015).

Evidence that culture impacts psychological development is longstanding (Atran & Medin, 2008; Cole, 1996; Kruger & Tomasello, 1996; Lave & Wenger, 1991; Levine et al., 2012; Miller & Goodnow, 1995; Rogoff, 1990; Scribner & Cole, 1973; Serpell, 1976; Shweder, 1990; Super & Harkness, 1986; Whiting & Whiting, 1975). Nevertheless, despite the growing recognition that most of what we know about child development is based on a narrow sample of human children, cross-cultural developmental studies are still quite rare and often rely on convenience sampling.

To document this continuing problem, and to highlight the parallels between publishing practices in developmental psychology and in the general field of psychology, Nielsen (2015) collated data on participant origin for all papers published in 2013 in the highest impact factor developmental psychology journals: *Child Development*, *Developmental Psychology* and *Developmental Science*. Of the 424 papers published in these three journals, 246 (58% of all publications) featured participants from the U.S., 68 (16%) from English-speaking countries outside the U.S. and a further 69 (16%) from Non-English-speaking European countries. Only 38 (9%) came from Central and South America, Africa, Asia, the Middle East and Israel combined. In sum, the leading journals

in our field show that we remain a science with a WEIRD bias. Many of the papers in this special section acknowledge the limitations of standard practice and sample more widely.

The child as anthropologist: A repertoire of cultural learning strategies

To the extent that all human children face the task of acquiring the skills, assumptions, and beliefs of the culture that surrounds and nurtures them, we might expect children everywhere to bring a similar repertoire of cultural learning strategies to that task. Recent developmental research has begun to highlight various plausible strategies within that repertoire. With an eye to many of the papers included in the special section, we offer a brief overview of those strategies.

If cultural learning typically involves learning from another person, we would expect human infants to be highly attentive to their caregivers and to the emotional feedback that they supply. Indeed, in the context of such intimate encounters, infants are likely to receive subtle guidance regarding the emotional priorities of the culture they are growing up in – the emotions that should be felt, displayed or attenuated. Thus, we identify such emotion learning as a basic form of cultural learning.

Young children, including infants, are also sensitive to pedagogic cues from caregivers. They are prone to treat various signals – such as eye contact and vocalizations followed by a deliberate action – as conveying pedagogic information, especially generic information likely to apply not just to this particular situation but also to a variety of similar situations in the future. It is clear that such receptivity on the part of young children – coupled with a pedagogic intent on the part of informed caregivers – would be important for passing on the type of cultural information that cannot be easily observed or

inferred from the immediate situation (Kline, 2015). Indeed, children who are the recipients of such pedagogic input may treat it as a relatively exhaustive account of the object or artifact that is targeted – a tacit signal that further autonomous exploration would yield no additional information (Bonawitz et al., 2011). In short, what has come to be known as *natural pedagogy* is also a plausible member of the child's repertoire of cultural learning strategies (Csibra & Gergely, 2009). It is likely to be an efficient vehicle for the transmission of opaque information.

The maintenance of specific cultural practices across successive generations calls, not simply for imitation, but for faithful, or *high fidelity*, imitation (Legare & Nielsen, 2015). Recent studies have shown that human children are remarkably disposed to such faithful imitation. More specifically, when children watch a model solve a practical problem, such as retrieving a desirable object from inside a container, they copy the model's sequence of actions with great fidelity. Children even include obviously unnecessary components of that sequence provided it is evident that the model has included those components deliberately (Lyons, Damrosch, Lin, Macris & Keil, 2011). Such a zeal for imitation – *overimitation*, as it has come to be known – is not seen among non-human primates. In the wake of a demonstration, they are prone to emulate what they have observed but they eliminate unnecessary and ineffective components (Horner & Whiten, 2005). Again, it is easy to see how overimitation – notwithstanding its inefficiencies – could also play a key role in the faithful transmission of local practices from one generation to the next.

Pedagogy and overimitation typically imply the presence of a well-informed member of the culture who takes the time to either deliberately convey information or

offer a demonstration to a young cultural apprentice. But if children are psychologically prepared to seek out cultural information, we might expect them not to wait upon its transmission by pedagogically-inclined adults. Rather, we can expect children to take their apprenticeship into their own hands – at least when presented with suitable opportunities. Thus, in the presence of a skilled practitioner – for example, someone who is an expert at weaving or fishing – we can expect young children to engage in close, 3rd party observation of that adult activity – even when, as a third party, they are not directly addressed or involved in the activity (Gaskins & Paradise, 2010; Rogoff, 2003; Tobin, Hsueh, & Karasawa, 2009).

Beyond their active observation of skilled practices, we might also expect children to adopt an interrogative stance – to explicitly request information from potential informants via gestures and questions. Indeed, children begin to do just that, starting in the second year of life (Chouinard, 2007). Moreover, their questions are not solely aimed at practical ends or at the mysteries of the natural world; children ply their caregivers with questions about the particular cultural world they live in – for example, they ask about puzzling interchanges involving money, the milking of cows but not pigs, and the fate of loved ones when they die (Harris, 2012).

Beyond these various strategies for cultural learning, it is plausible that children are biased to readily identify key components of the surrounding culture. Two such biases have emerged in recent research. In the first place, many of the entities that an infant or young child encounters have not been put there by natural laws. Of course, children do encounter a variety of natural phenomena: rocks, plants, animals and insects. However, they also encounter a plethora of cultural artifacts – cups, spoons, knives, baskets,

garments, houses, and so forth. Such artifacts have been deliberately designed and created by human beings, typically with some culturally regulated activity in mind (Phillips, Seston, & Kelemen, 2012). A discriminating and receptive cultural learner is likely to be alert to the status of such artifacts: to construe them teleologically, or being designed for a cultural purpose, unlike natural phenomena (Kelemen, 1999). Thus, rather than viewing such design-based thinking as an epistemic handicap – as Piaget implied in his influential, early analyses of children’s ‘why’ questions (Piaget, 1926) – we can plausibly view such teleological thinking as yet another example of children’s receptivity to cultural input and an important strategy for cultural learning.

In addition to purpose-built artifacts, cultures also include a variety of socially orchestrated, conventional routines, commonly known as ritual activities (Watson-Jones & Legare, 2016). These routines have no obvious counterpart in primate groups. Admittedly, we can observe repetitive social interactions, such as mutual grooming, among non-human primates but we do not find social routines that mark out one primate group from another. Granted the existence of this type of social practice in countless human societies, we might reasonably expect young children to display sensitivity toward ritualized behavior – a ready attunement to the distinctive features of ritualized activities. For example, we can expect them to be alert to occasions when several actors move in a synchronous or choreographed fashion – with no obvious instrumental goal in sight (Legare, Wen, Herrmann, & Whitehouse, 2015). Indeed, emerging evidence demonstrates that young children do show such an attunement and copy the actions they have observed despite their opacity (Clegg & Legare, 2016a; Herrmann, Legare, Harris, & Whitehouse, 2013) and suggests that engaging in rituals is motivated by a drive to

affiliate with other social groups members (Watson-Jones, Whitehouse, & Legare, 2016; Watson-Jones, Legare, Whitehouse, & Clegg, 2014; Wen, Herrmann, & Legare, 2016). New cross-cultural research demonstrates that the capacity to use imitation flexibly to learn both instrumental and ritual behavior is a pervasive feature of social learning in childhood (Clegg & Legare, 2016b).

Drawing these various examples together, we conclude that it is reasonable, both as a shorthand summary and as an inspiration for future research, to think of young children not just as little scientists or even as budding psychologists – metaphors that are commonly deployed in the study of cognitive development – but to think of them also as gifted anthropologists. Like anthropologists – but without the benefit of any formal training, children deploy a repertoire of strategies for reproducing and deciphering the distinctive set of phenomena that make up a culture – any human culture.

The distribution of cultural learning

Granted this over-arching framework, we can start to formulate more specific proposals about the distribution of cultural learning strategies, their relative frequency and their prominence in particular cultural contexts. First, if our general orientation is correct, we would expect the various cultural learning strategies and biases that we have sketched above – emotion learning, natural pedagogy, overimitation, third party observation, question-asking, teleological thinking and the ritual stance – to be observed among young children growing up in a wide range of human cultures – including hunter-gatherer families, traditional pastoralist families, and highly educated urban professional families. Given the selective population sampling described earlier, it is evident that that prediction remains to be thoroughly tested. Nevertheless, we note that several

contributions to the special section lend encouragement to our speculation that all seven of the strategies that we have identified will be widely distributed.

For example, two papers focus on early emotion learning. Broesch, Rochat, Olah, Broesch and Henrich examined emotion mirroring in mother-infant dyads in Fiji, Kenya, and the U.S. Overall, mothers in all three cultures responded similarly to infant bids, but subtle differences were found across these settings in the ways that mothers responded to particular affective displays. Kärtner, Crafa, Chaudhary and Keller offer a detailed analysis of the origin of such differences – tracing them back to variation among mothers in their basic presuppositions about desirable or appropriate forms of social interaction. Thus, they found that mothers in Germany place greater emphasis on the child's autonomous experience whereas mothers in India place greater emphasis on the child's relationships to others and these differences played out in the moment-to-moment task of socializing their children. Accordingly, when the child received a gift from a third party, Indian and German mothers underlined different aspects of that exchange for their infants. These findings illustrate how adults' priorities and their associated affective and verbal signals can be picked up by toddlers and incorporated into their affective repertoire.

As noted earlier, research conducted in the U.S. has demonstrated that deliberate pedagogy is effective in limiting exploration of novel objects in childhood (Bonawitz et al., 2011). Is this funneling effect of pedagogy an index of children's spontaneous conclusions about the exhaustiveness of taught information? Alternatively, is it only those children that have been exposed to a good deal of formal teaching who come to assume that teachers provide all the information they need. Contrary to what might have

been expected, Shneidman et al. provide evidence for the funneling effect of instruction among Yucatan Mayan children in southeastern Mexico, despite their minimal exposure to formal teaching. By implication, children grasp the implications of deliberate pedagogy early in life, before they have started formal schooling. Instruction narrows their autonomous exploration, steering them toward standard cultural practice, both in the U.S. and in Yucatan Mayan communities.

Two papers in the special section provide striking data on the onset and distribution of teleological thinking. Green, et al. examined the early emergence of such thinking in two cultural settings. They found that even at 8-months, infants have established goal-oriented expectations for familiar artifacts. So, as they watch an actor, infants anticipate that an eating implement will be used for a purpose – for eating. They look in an anticipatory fashion toward the mouth of an actor. Nevertheless, those anticipatory looks are tied to culture-specific artifacts. Chinese infants display such anticipatory looks for chopsticks but not for spoons whereas the reverse is true for Swedish infants.

Sánchez Tapia et al. examined teleological thinking among participants in a mid-western town in the United States as well as in a relatively remote Quechua-speaking community in the Peruvian Andes. They report persuasive evidence that teleological thinking is widespread in the context of cultural artifacts but much more circumscribed in the context of natural phenomena. In both settings, children and adults often volunteered a teleological, purpose-oriented explanation when asked about artifact characteristics, for example: “Why do coats have pockets?” By contrast, they often produced a causal, rather than a teleological explanation, when asked about non-living natural kinds, for example:

“Why are rocks pointy?” By implication, children are sensitive to the boundaries of culture – they differentiate between entities that are designed for human purposes and those that have no evident purpose.

Despite our expectation that the cultural learning strategies that we have identified will be widely distributed across the world’s cultures – as supported by several papers in the special section – we also anticipate that the frequency with which particular strategies are deployed may vary considerably both within and across cultures. For example, Lancy reviews a wide range of ethnographies from pre-industrial cultures where schooling is limited and where young children are soon inducted into productive, adult activities (such as food gathering and preparation). Lancy argues that young children growing up in those cultures are rarely the beneficiaries of deliberate pedagogy or deliberate modeling by an adult. Nevertheless, on the basis of 3rd party observation – plus adult tolerance for children’s autonomous experimentation – children practice the use of various artifacts. Such practice is often varied out in the context of pretend play activities based on the work activities of adults. Boyette describes this type of play by children growing up among the Aka, forest foragers and the Ngandu, small-scale farmers of the Central African Republic. More generally, it is plausible to assume that cultures as well as particular activities within those cultures vary considerably in the extent to which they promote each particular type of cultural learning. Silent third party observation will be obligatory in some contexts whereas persistent questioning will be permissible in others.

Cultural transmission is often viewed as a process that operates in approximately the same way across cultural domains. Yet new evidence suggests that different kinds of information (e.g., information about danger) are more “learnable” than others. Cross-

cultural research by Barrett, Peterson, and Frankenhuis has shown that acquiring information about what is dangerous varies sharply by domain: it is strongest for animals and weakest for artifacts in both populations, albeit with some culture-specific variation.

Children's cultural learning – whether it is based on natural pedagogy, on overimitation, on question-asking, or third party imitation is also likely vary considerably depending on the availability of potential 'informants' – i.e., people who might be able to pass on cultural practices and beliefs. In principle, children can learn from caregivers, older siblings, peers, neighbors, teachers and even strangers. However, if children are to become versed in their own culture, then indiscriminate learning from any informant would not be optimal – better to learn selectively, especially from those who are most representative of the surrounding culture. Granted this argument, we can speculate that children will display various learning biases – notably to learn from familiar informants rather than from strangers, from those who display local ingroup markers such as native accent, rather than from outgroup members, from those who elicit assent or respect rather than dissent or disrespect. A variety of recent studies have begun to document such selectivity in young children (Harris, 2012; Koenig & Sabbagh, 2013).

Hitherto, the study of such biases has mainly targeted young children growing up in the United States and Europe and it has primarily focused on children's learning from relatively simple pedagogic episodes in which two informants provide children with conflicting information – for example, about what to call a novel object or how it is used. We have little information about whether such selectivity is universal and whether it impacts all types of cultural learning. The findings in this special section begin to correct this limitation. Chudek, Baron and Birch asked if the status of the model would affect

children's tendency to overimitate. Surprisingly, they found that children were indiscriminate. Whether the model was more or less successful or more or less prestigious (as indexed by bystander attention) children were equally prone to overimitate the model's demonstration by including many of its superfluous elements. Nielsen, Mushin, Tomaselli and Whiten also found considerable stability in the tendency to overimitate among children in indigenous Australian communities as well as Westernized communities. Whether children worked in pairs or alone, their rate of overimitation did not vary. Further work will be needed to establish how far overimitation is unusual or typical in being a non-selective form of cultural learning in which any informant is as good as another.

A major source of children's learning about the world, especially the cultural world, is the language that they hear. Young children display considerable receptivity to adults' explicit verbal claims, including those that run counter to their observations or intuitions (Lane & Harris, 2014). Horowitz and Frank move this research program in an important new direction by asking if preschool children display a similar receptivity to implicit rather than explicit claims. They uncovered an early sensitivity to the contrast with what is typical that can be implied by many adjectives. For example, when introduced to "a tall zib" (with a stress on *tall*) or to "a dirty zib" (with a stress on *dirty*), preschoolers realized that unlike this allegedly atypical zib, a typical zib would *not* be tall or dirty. Those of us who have received an all-too-rare compliment on our haircut or shoes will get the picture here. This research indicates that children are alerted to what is culturally normative or typical not just via explicit remarks but also by unstated implications.

Hitherto, research on overimitation has studied its manifestation in the realm of action, especially tool use. Much less is known about the role that imitation plays in other cultural domains such as language. Klinger, Mayor, and Bannard have begun to remedy this omission. Their research on the fidelity with which children imitate a spoken utterance suggests that they imitate with lower fidelity when they understand the function of a given linguistic element whereas they imitate faithfully when the function is opaque.

Future best practices for research on the ontogeny of cultural learning

The universal goals of childrearing include promoting the survival, health, and cultural competency of children (LeVine, 2007). In this introduction, we have emphasized the extent to which children acquire the skills and knowledge to function as members of their respective cultures in collaboration with caregiving adults and older peers (Bjorklund, Hubertz, & Reubens, 2004; Cole, 1996; Keller, 2003; Konner, 2010; Lancy, 2014).

To build a more comprehensive understanding of this acquisition process, it will be helpful to examine these practices in a strategically selected set of cultural contexts that differ in theoretically relevant ways. Cultural groups differ along a variety of ecological, social, and structural variables, such as integration into the global economic marketplace, social organization, urbanicity, kinship networks, and presence and length of formal education. Systematic comparisons within and between multiple groups can provide stronger support for causal claims that a particular variable of interest is responsible for variation in dependent measures. For example, studying Aboriginal populations in Northern Australia and descendants of hunter-gatherer populations in

Namibia would allow us to examine populations that are similar in terms of social organization (i.e., egalitarian tribes) but different in terms of access to Western-style education (relatively higher among Aboriginal Australians than among the Hai//om in Namibia). Studying Melanesian populations in Yasawa Island, Fiji, and Tanna, Vanuatu, would allow us to examine populations that are similar in terms of subsistence agricultural practices and limited exposure to Western-style education but different in terms of social organization (hierarchical social organization in Fiji versus egalitarian chiefdoms in Vanuatu).

Thus, selecting multiple sites that are similar along some variables but different along others will: (a) allow us to examine the impact of sources of variation on outcomes, (b) yet prevent us from inadvertently describing idiosyncratic features of particular cultural contexts, and (c) provide opportunities to reveal social and psychological processes that would be hidden if more narrow data collection were undertaken.

Up until recently, the limited infrastructure for conducting research across multiple field sites has posed an impediment to understanding the ontogeny of teaching and social learning across cultures. However, collaborative networks of international field sites are starting to emerge—an undertaking that requires the expertise and cooperation of multiple international partners.

A recently published study provided a powerful illustration. Based on comparisons across multiple sites, Peter Blake, Katherine McAuliffe and colleagues studied children's reactions to unfair distributions of rewards – especially distributions that would place either them or their partner at a disadvantage (Blake, et al., 2015). The children were recruited from Canada, India, Mexico, Peru, Senegal, Uganda, and the

U.S.—countries selected for their variation along dimensions potentially relevant to fairness, namely, population size, religion, and degree of industrialization. The results showed that children around the globe were willing to incur a cost to keep their partner from accruing more resources than themselves – they rejected unfair offers where they would receive fewer rewards than their partner. By contrast, children from only a handful of societies were willing to incur a cost to keep themselves from accruing more resources than their partner – they accepted unfair offers where they would receive more rewards than their partner. Given the multiple sites in which testing was conducted, Blake and his colleagues were able to pinpoint industrialization as a key factor associated with children’s sensitivity to unfairness toward a partner.

A further challenge to conducting research of this kind is gaining approval to work in remote and indigenous communities. Connections need to be established with those communities and relationships developed based on trust and respect, an issue that is especially critical when working with children. Ideally, researchers should work closely with local communities at international field sites to ensure the ecological validity of studies and contribute to the preservation of information about the beliefs, values, and practices of unique cultural contexts.

Finally, it should be acknowledged that cross-cultural diversity can be studied both within and between populations. The emphasis of this special section is on international research but cultural diversity within the U.S. can provide key insights into the impact of cultural context on developmental processes and outcomes (Bang & Medin, 2010; Medin & Bang, 2014; Rowley & Camacho, 2015).

One particularly informative context for studying developmental processes is immigration. Thus, instead of studying cultural learning by children whose families have been part of the same cultural group for many generations, the study of immigration allows us to examine how children's cultural learning in one culture (the host culture) is affected by their own and their caregivers' prior cultural learning in a different culture (Silva, Correa-Chávez & Rogoff, 2010). Ultimately, however it is important that immigration should also be studied in a global context. In the U.S., for example, research on the “immigration paradox” has often demonstrated better outcomes for earlier generations of immigrant children relative to later generations (Marks, Ejesi, & García Coll, 2014) but international research on immigration raises the possibility that the “immigrant paradox”, while common in the U.S., may not necessarily be a typical outcome elsewhere (Motti-Stefanidi, 2014).

Conclusion

Interdisciplinary programs of research are needed to provide a cross-cultural, and mixed-methodological approach to examining the ontogeny of cultural learning, a topic with important implications for understanding the interplay of cognition and culture in early childhood. A comprehensive account of cultural learning requires systematic study of variation and continuity in childrearing practices and beliefs within and among diverse cultural groups.

As the afore-cited studies attest, there is no universal cultural context in which children grow up. Hence, there is no universal environment for the human mind. To understand development, it is necessary to exercise caution when generalizing beyond the

specific sociocultural context at hand. We have argued that children everywhere are likely to draw on a similar repertoire of cultural learning strategies. Nevertheless, there is also evidence that children's cultural environment can significantly impact the deployment of those strategies. Data from the papers in the special section represent a substantial increase in our knowledge about the developmental origins of a psychological hallmark of our species, our capacity for cultural learning.

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