# Exploring Cognitive Diversity Across Disciplines and Cultures

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Since the cognitive revolution, a widely held assumption has been that—whereas content may vary across cultures—cognitive processes would be universal, especially those on the more basic levels. Even if scholars do not fully subscribe to this assumption, they often conceptualize, or tend to investigate, cognition as if it were universal (Henrich, Heine, & Norenzayan, 2010). The insight that universality must not be presupposed but scrutinized is now gaining ground, and cognitive diversity has become one of the hot (and controversial) topics in the field (Norenzayan & Heine, 2005). We argue that, for scrutinizing the cultural dimension of cognition, taking an anthropological perspective is invaluable, not only for the task itself, but for attenuating the *home-field disadvantages* that are inescapably linked to cross-cultural research (Medin, Bennis, & Chandler, 2010).

In a recent debate on the role of anthropology in and for cognitive science, obstacles that may hamper rapprochement were discussed in detail (Bender, Beller, & Medin, 2012). In this symposium, we intend to move a step forward and showcase efforts to overcome these obstacles. The contributions to this symposium pursue a problem-driven approach to tackle specific questions of shared interest. The symposium brings together scholars from different disciplinary backgrounds (including cognitive and evolutionary anthropology, psycholinguistics, and cognitive, developmental, and comparative psychology), who are among the leading scientists in their fields. Each of them has contributed considerably to our expanding knowledge on how culture and cognition interact (e.g., Beller & Bender, 2008; Haun et al., 2011; Legare & Souza, 2012; Majid, Boster, & Bowerman, 2008; Medin & Atran, 2004). They present current research on different domains, ranging from causal cognition on the physical world through semantic categorization of olfaction and mental state understanding to processes of cultural transmission and moral reasoning in the biological domain, thus shedding new light on a field in cognitive science, in which recent years have seen an upsurge of interest and controversial debates.

## Olfactory language and cognition

Asifa Majid

It has long been claimed "humans are astonishingly bad at odor identification and naming" (Yeshurun & Sobel, 2010). However, recent evidence suggests exquisite elaboration of olfactory lexicons in Aslian languages spoken in the Malay Peninsula (Burenhult & Majid, 2011; Wnuk & Majid, 2012). I present new data from speakers of Jahai, showing that Aslian language speakers show more agreement and shorter reaction times when free naming odors than their Western (Dutch) counterparts. This data further demonstrates that some speakers can be astonishingly good at odor naming. Furthermore, the Jahai data challenges current accounts of olfactory language and cognition, which in turn has implications for the larger language-thought debate.

## Weighing up physical causes in Germany and Tonga: A cross-cultural study on causal cognition

Sieghard Beller, Annelie Rothe,
Gregory Kuhnmünch, & Andrea Bender

When people determine which of the entities involved in a physical interaction is responsible for its outcome, they weigh the entities differently even if the interaction is symmetric. This effect depends on various factors and also varies cross-culturally (Bender & Beller, 2011). However, our results differ from previous research. In a replication study with participants from Germany and Tonga we investigate whether this is due to differences in the presentation of stimuli (visual vs. verbal) or to differences in answer mode (explanations vs. ratings of responsibility), and we test hypotheses on which cultural and/or linguistic factors may account for the cultural differences.

## Mental perspective taking across species and cultures

Daniel Haun, Katja Liebal & Juliane Kaminski

Any trait claimed to define a species, needs not only be derived in that species, i.e. unique amongst its close phylogenetic kin, but also widespread across that species. Hence only concerted comparisons across related species and human cultures wield the power to identify the skills that define the human species (e.g., Haun et al., 2006). In the last years, psychologists have claimed such definitive traits in the area of social cognitive abilities such as the ability to understand others' knowledge, desires and beliefs. Here we compare individuals' abilities to understand others' mental states at dif-

ferent levels of complexity across a selected set of human cultures as well as across all non-human great ape species. In a non-verbal competitive game, participants were challenged to predict a competitor's moves, based on his/her knowledge, beliefs and desires. While children of all three cultures predicted with similar proficiency what their competitor chose, the non-human apes succeeded only in interpreting their competitor knowledge state, but showed no evidence of interpreting beliefs and desires. This data is consistent with the claim that reasoning about others' beliefs and desires is cross-culturally common and derived in humans.

## Communities of values: Moral reasoning about human-plant interactions among Indigenous Ngöbe of Panama

Bethany Ojalehto & Douglas L. Medin

Research on sacred values often asks participants to make tradeoffs between a sacred good (e.g. acres of forest) and an instrumental incentive. As the external decision-maker, the participant decides the outcome for an insentient entity. But how might the decision-making process change if the entity is thought to be mindful? In previous research, we found that Indigenous Ngöbe adults of Panama are sensitive to signs of plant and animal sentience and may consider them agents with moral standing. Drawing on research suggesting that mind perception is key to moral reasoning (Gray, Gray, & Wegner, 2007), the current study investigated Ngöbe reasoning about human-plant sacred value conflicts (e.g., right to life for plants versus humans). We find that Ngöbe treat plants as moral subjects whose interests must be considered. However, Ngöbe reframed tradeoffs from cases of competing interests to cases of cooperative relationships, reasoning in terms of the need for balanced reciprocity. We propose that Ngöbe treat sacred values not as absolute, objective goods which are pitted against each other, but as relational goods seen from multiple points of view (both human and nonhuman) which ultimately converge in systems-level perspective. We discuss implications for research on sacred values and morality.

## Imitative Foundations of Cultural Learning

Cristine H. Legare

Imitation is multifunctional; it is crucial not only for the transmission of instrumental skills but also for learning social conventions such as rituals and facilitating social interaction. Thus, although children are indeed instrumental imitators (Gergely, Bekkering, & Király, 2002), high-fidelity imitation has recently been linked to quintessentially social concerns, including the acquisition of normative behavior and affiliative motivations (Kenward, Karlsson, & Persson, 2011; Over & Carpenter, 2012). Despite the fact that imitation is a pervasive feature of children's behavior, there does not yet exist an integrated theoretical account of how children use imitation flexibly as a tool for cultural learning. Little is known about the kinds of information children use to determine when an event provides an opportunity for learning instrumental skills versus cultural conventions. I propose that the cognitive systems supporting instrumental and conventional learning are facilitated by the differential activation of an instrumental stance (i.e., rationale based on physical causation) and a ritual stance (i.e., rationale based on cultural convention). I will present data demonstrating that (a) conventional framing increases imitative fidelity and the detection of differences between the performances of two actors and (b) witnessing multiple actors perform an action sequence increases imitative fidelity. The ritual stance increases imitative fidelity, a process essential for understanding cultural learning.

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