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Percepts and Concepts Across Cultures

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Overview

The cognitive sciences have been in a long-standing dispute—is perception uniform and universal (Fodor, 1983; Firestone & Scholl, 2016), or could our beliefs, thoughts, and experiences affect our percepts (Bruner, Goodnow, & Austin, 1956; Goldstone, de Leeuw, & Landy, 2015)? Laboratory-based experiments have shed crucial light on when and how perception and conception interact, but the diversity of human cultures worldwide provides a different type of insight into the nature of mind—“a natural laboratory of variation” (Evans & Levinson, 2009: 432) which can be exploited to test how similar or different aspects of perception and conception are in their varied ecological niches.

This symposium uniquely brings together leading and emerging scholars investigating a broad swathe of perceptual notions across cultures. To date, the cognitive sciences have taken as their model perceptual system vision, and hundreds of studies have focused on color categorization and perception across cultures. In this session, we revisit the field of color categorization with a state-of-the-art talk from **Edward Gibson** on what accounts for the variation we find cross-culturally. But we also move beyond vision to the lesser-studied senses of audition and olfaction too. **Josh McDermott** will present recent cross-cultural findings regarding auditory perception, in particular with respect to music, and show while some notions developed in the west do generalize well cross-culturally, other notions are not as well-supported (e.g., the preference for canonically consonant pitch combinations). **Tanya Luhrmann** continues on the topic of sound, and presents thought-provoking research on experiences of auditory perception that appear without an auditory stimulus—i.e., the perception of “hearing voices”. She shows that cultural models affect both the

frequency and content of such auditory percepts. Finally, **Artin Arshamian** presents new research into the cross-cultural perception of olfaction. As with other sensory modalities, there is a presumption of universality in this domain: the claim is that the chemical structure of a molecule determines its pleasantness. Arshamian presents results from a larger-scale cross-cultural investigation that broadly supports the contention of universality in this domain.

Together these talks demonstrate both where our theories of perception and conception are supported by the cross-cultural data, and where we must reconsider the facts; and as such find a more robust path to understanding both the commonality and diversity of the human mind.

Color Categories Across Languages

Reflect Color Use

Edward Gibson, Richard Futrell, Julian Jara-Ettinger, Kyle Mahowald, Leon Bergen, Sivalogeswaran Ratnasingam, Mitchell Gibson, Steven T. Piantadosi, and Bevil R. Conway

The number of color terms varies drastically across languages. Yet despite these differences, certain terms (e.g., red) are prevalent, which has been attributed to perceptual salience. This work provides evidence for an alternative hypothesis: The use of color terms depends on communicative needs. Across languages, from the hunter-gatherer Tsimane’ people of the Amazon to students in Boston, warm colors are communicated more efficiently than cool colors. This cross-linguistic pattern reflects the color statistics of the world: Objects (what we talk about) are typically warm-colored, and backgrounds are cool-colored. Communicative needs also explain why the number of color terms varies across languages: Cultures vary in how useful

color is. Industrialization, which creates objects distinguishable solely based on color, increases color usefulness.

Cross-Cultural Insights into Music Perception

Josh McDermott

Most of what we know about music and auditory perception derives from experiments conducted on members of developed Western societies. Yet many additional insights can be gained by studying other cultures. Phenomena that are consistent across cultures likely reflect biological constraints on perception, whereas those that vary cross-culturally could represent effects of culture-specific experience. I will describe our experiments assessing aspects of music-related audition in remote populations in rural Bolivia. We observe significant cross-cultural variation in aspects of perception that have been long presumed to be universal, such as the preference for canonically consonant pitch combinations. However, we also find strong consistencies in other music perceptual phenomena, such as the assumption of a logarithmic scale for pitch intervals, despite highly divergent musical experience among the studied cultures. The results provide new insights into universal features of perception and the likely role of culture in shaping how we hear and evaluate music.

The Voices of God and The Voices of Psychosis in the US, Ghana, and India

Tanya Luhrmann

This talk examines the phenomenological features of voice-hearing among many different kinds of people. I draw from hundreds of interviews with people who do, and do not, meet criteria for serious psychotic disorder, and who have experiences of hearing voices, as well as from research that sought to train non-clinical subjects to have more sensory experiences of God. I found that specific practices—inner sense cultivation, or the practice of attending to inner sensory experience—increased the likelihood that people in the non-clinical population would report that they had a sensory or quasi-sensory experience of God. I also found that local models of mind affected the frequency with which the nonclinical religious population reported hearing God's auditory voice, and the content of voices heard by the clinical population. This suggests that perceptual experiences can be altered to some degree by culture.

Are the Same Odors Universally (Un-)Pleasant?

Artin Arshamian

In olfaction odor pleasantness is believed to be the primary axis of odor perception, and recent studies have claimed that odor pleasantness is a predefined property of an odorant's chemical structure (e.g., Khan et al., 2007). However, these discoveries are based on experimental work from industrialized and mainly Western cultures which limits claims of universality since it has been shown that olfactory cognition varies strongly across cultures. For example, whereas industrialized cultures find odor naming hard some hunter-gatherer groups find odors easy to name (Majid & Burenhult, 2014; Majid & Kruspe, 2018). Thus we set out to study the claim that chemical structure determines odor pleasantness by collecting data across different non-Western cultures including several hunter-gatherer groups. The results indicate there may indeed be universal aspects to judgments of odor pleasantness. This suggests variable olfactory cognition has to interface with shared olfactory percepts.

References

- Fodor, J. (1983). *Modularity of Mind*. Cambridge, MA: MIT Press.
- Firestone, C., & Scholl, B. J. (2016). Cognition does not affect perception: Evaluating the evidence for “top-down” effects. *Behavioral and Brain Sciences*, 39, 1–77.
- Bruner, J., Goodnow, J., & Austin, G. (1956). *A Study of Thinking*. New York, NY: Wiley.
- Goldstone, R. L., de Leeuw, J. R., & Landy, D. H. (2015). Fitting perception in and to cognition. *Cognition*, 135, 24–29.
- Evans, N., & Levinson, S. C. (2009). The myth of language universals: Language diversity and its importance for cognitive science. *Behavioral and Brain Sciences*, 32(5), 429–448.
- Khan, R. M., Luk, C.-H., Flinker, A., Aggarwal, A., Lapid, H., Haddad, R., & Sobel, N. (2007). Predicting odor pleasantness from odorant structure: Pleasantness as a reflection of the physical world. *Journal of Neuroscience*, 27(37), 10015–10023.
- Majid, A., & Burenhult, N. (2014). Odors are expressible in language, as long as you speak the right language. *Cognition*, 130(2), 266–270.
- Majid, A., & Kruspe, N. (2018). Hunter-gatherer olfaction is special. *Current Biology*, 28, 1–5.