

# Cultural Impacts on Cognition

Organizers: **Andrea Bender & Sieghard Beller** ({bender, beller}@psychologie.uni-freiburg.de)  
Department of Psychology, University of Freiburg, Germany

**Giovanni Bennardo** (bennardo@niu.edu), Department of Anthropology, Northern Illinois University, USA

**Lera Boroditsky** (lera@psych.stanford.edu), Department of Psychology, Stanford University, USA

**James Shilts Boster** (jboster@cognition.clas.uconn.edu), Department of Anthropology, University of Connecticut, USA

**Asifa Majid** (Asifa.Majid@mpi.nl), Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands

**Douglas L. Medin** (medin@northwestern.edu), Department of Psychology, Northwestern University, USA

**Jürg Wassmann** (Juerg.Wassmann@urz.uni-heidelberg.de), Institute of Ethnology, Heidelberg, Germany

Culture plays an integral part in human cognition. As cognitive science aims at understanding the nature of the human mind, taking culture into account is a crucial part of this endeavor. Even if we assume cognitive processes are universal, the content on which they operate may be shaped by culture-specific concepts, models, and values. The degree of cultural impact will be addressed in our symposium from psychological and anthropological perspectives. Speakers will cover a broad spectrum of topics and domains in search for recurrent patterns across cultures to consolidate existing theories or for exceptional cases to question them. Despite a consent on the importance of culture, conclusions vary leaving ample opportunity for—a hopefully vivid—discussion.

**A. Majid: What Categories of the Human Body Reveal about the Human Mind.** Theories of how we find “parts” from “wholes” assume that discontinuities in the image indicate a new part. For instance, the human body can be divided into head, arms, legs and trunk. However, the same discontinuities are not recognized across languages. Some languages do not have separate categories for arms and legs, while others have much more fine-grained categories, distinguishing upper arm, lower arm, upper leg, lower leg. I examine the implications of these “exceptional” categories for existing theories of categorization and word learning.

**J. S. Boster: Three Tests of the Sapir-Whorf Hypothesis: Color, Emotion, and Disintegration Events.** If cognition were strongly linguistically determined, linguistic differences should be mirrored by non-linguistic cognitive differences. This paper reports a test of the Sapir-Whorf hypothesis for three domains: color classification, facial expressions of emotion, and disintegration events (cutting and breaking). While different languages represent substantially different ways of segmenting the domains, the similarity judgments of American English speakers do not appear to be influenced by the structure of English and are patterned more similarly to the aggregate of all languages examined than to English alone.

**L. Boroditsky: East of Tuesday: Consequences of Spatial Orientation for Thinking about Time.** Spatial language and spatial thinking are often metaphorically reused for other domains such as time, music, temperature, or importance. But what happens when two groups of people have very different ways of representing space in the first place? If thinking about time is indeed dependent on spatial representations, then temporal representations should differ in corresponding ways when spatial representation differ. We compare two cultures (Americans vs Kuuk Thaayorre) with

different predominant conceptualizations of space (relative vs absolute) and test whether their ideas of time also differ.

**G. Bennardo: Instantiating a Cultural Model: Speaking and Thinking about Tongan Social Relationships.** Tongans prefer to organize their mental representations of spatial relationships radially, which implies using a fixed point of reference (other than ego) and describing the object to be identified as positioned from/toward that point. An identical organization was found in other knowledge domains (e.g., possession, navigation, religion, kinship). I propose a Tongan cultural model, *radiality*, conceived as an homology among mental modules and/or knowledge domains. I present further evidence for such a cultural model. Results of analyses conducted on linguistic production and experimental tasks about social relationships are discussed.

**S. Beller & A. Bender: Conditional Inducements in Cultural Context.** Conditional promises and threats aim at changing another person’s behavior according to own goals. Both types of inducement combine, among others, components on the linguistic, deontic, and emotional level. Comparing Germany, China, and Tonga, we examine the extent to which the understanding of conditional inducements is shared, and the degree of cultural variation with regard to the different components. The results support conceptual universality, but also show that most components are affected by culture-specific self-concepts and attribution tendencies.

**J. Wassmann: Person, Space, and Memory.** Among the Iatmul of the Sepik River, Papua New Guinea, the secret sacred names of persons and places are at the centre of the ramified mythological system that is anchored in the landscape and combines past and present. If the rightful possession of cosmologically significant names is contested, the opponents and their supporters meet for a special debate, which involves mastery of the most complex of intellectual activities, combining elaborate feats of rhetorical skill and memory. Remembering the thousands of mythologically significant names that may be the subject of dispute thus works through localized mental representations.

**M. Bang, S. Unsworth, K. Washinawatok & D. L. Medin: Mental Models and their Possible Relevance to Science Education.** We have been using a variety of measures to assess how children and adults conceptualize relations between humans and the rest of nature. We find striking cultural differences (e.g., between Native-Americans and Euro-Americans)—differences that have implications for science instruction.