Beyond Whorf: How Language Affects Thought

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In addition to cross-linguistic Whorfian effects discussed in recent literature (e.g., Boroditsky, 2001; Gumperz & Levinson, 1996; Gentner & Goldin-Meadow, 2003) there is accumulating evidence that language more generally has deep effects on cognitive processes both long-term and on-line. The findings presented in this symposium implicate language in perceptual encoding, forming and maintaining categories, guiding attention, and memory. Mechanisms by which affects and does not affect cognition will be discussed.

Lera Boroditsky

The Mechanisms Through Which Patterns in Language Affect Thought

Do people who speak different languages think differently about the world? Does learning new languages change the way you think? Do polyglots think differently when speaking different languages? I will present several lines of cross-linguistic experiments illustrating how the languages we speak shape the way we attend to, represent, and remember our experiences in the world. The talk will focus on the mechanisms through which patterns in language can have long-term and on-line influences on cognition.

Terry Regier

Color language and cognition: Which side are you on, anyway?

The debate over color language and cognition is framed by two opposing views. The 'universalist' view holds that there are universals of color cognition that also constrain color naming. The 'relativist' view, in contrast, holds that color categories are defined at their boundaries by linguistic convention, and that color naming shapes color cognition, rather than the other way around. So which view is right? An interesting combination of both, I will argue. I will present data supporting universal tendencies in color naming, and will also present data showing that color naming affects color cognition. However, in a departure from the usual framing of the debate, we find that language affects perception in only half of the visual field - the right half—a pattern predicted by the functional organization of the brain. (Collaborative work with Aubrey Gilbert, Paul Kay, and Richard Ivry).

Debi Roberson

How Language Helps Category Acquisition.

A large body of recent research has highlighted the tight links between language and cognition. An outstanding question concerns the mechanisms by which language might help to shape cognitive organization and our categorization of the perceived world. In a series of recent experiments we have examined the processes by which children acquire color categories, both cross-culturally in a naturalistic setting and in an experimental setting where learning experiences were manipulated (Roberson, Davidoff, Davies & Shapiro, 2004; O'Hanlon & Roberson, in press). The results suggest that the process of concept acquisition is remarkably similar even in widely differing cultures, and that color category acquisition is slow and effortful for children, regardless of how many categories must be learnt. Moreover, both attentional and linguistic factors contribute to the process of color term learning. In an experimental setting, more was learned about novel color terms when both attentional and linguistic aspects of the learning context converged for both English and Italian children.

Robert Goldstone

How Labels Change Contents

Unlike paper labels applied onto cans, category labels applied to objects can penetrate "inside" to affect the contents. I will consider two mechanisms by which experience labeling objects can affect perceptual representations of the labeled objects. Labeling can lead to unitized perceptual encodings whereby a single perceptual chunk is created for a complex assembly of stimulus components. It can also lead to differentiation, whereby perceptual dimensions that were originally fused become split apart. I will describe how these mechanisms can be computationally reconciled by a concept learning system that creates appropriate units to support important labels. The experiments and model suggest that labeling and perceptual encoding mutually influence each other. Labels are not simply attached to the outputs of independent perceptual processes, but instead modify the nature of the outputs.

Gary Lupyan

Labels Help us Learn, but Make us Forget

I will discuss results from several recent experiments to support this claim. The first shows that verbal labels help adults form novel categories even when the labels are entirely redundant, providing no information about the structure of the categories. Categories learned with labels are not only learned faster, but are more robust. The second line of evidence shows that labeling familiar objects results in worse memory for particular instances of the labeled categories. Seeing a chair and labeling it as "chair" makes it more difficult to remember which chair you saw. The facilitatory effect of labels on categorization may come at the cost of accurate encoding of individual exemplars. These results are predicted by a model implementing the *language feedback hypothesis* which argues that category labels (words) feed back to affect semantic and perceptual representations.