

Ecologies of Spatial Language

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Spatial language is part of a broader ecology. How we talk about space is woven in with how we gesture and reason; with the natural and built worlds we inhabit; with our cultural conventions and practices; with the myths we tell and metaphors we live by. My interest is in understanding these rich ecologies—in identifying the invisible threads connecting spatial language to everyday behavior and everyday thinking. Investigating these ecologies will ultimately help us answer a big, two-part question: What are the *causes* of the diversity we see in spatial language across speech communities, and what are the *consequences* of such diversity? But we shouldn't get ahead of ourselves. Before we can sort out cause and consequence, we need a better understanding of the *concomitants* of linguistic diversity: those aspects of everyday behavior and thought that go hand in hand with cross-linguistic differences in spatial language.

Spatial gestures

One concomitant of spatial language that remains to be fully understood is spatial gesture. Spatial representations evident in gesture sometimes overlap with—but other times depart from—those evident in language (for discussion, see Cooperrider & Goldin-Meadow, 2016). A major reason for this departure is that gesture has representational obligations that language does not. When we describe a recently observed event in words (e.g., “The child ran inside”), we do not have to specify a perspective on the event or a frame of reference (FoR). But when we gesture about the same event, there's no getting around it: gestures unfold in space and thus specify a perspective and an FoR *obligatorily*. This fact raises a number of tantalizing questions for researchers interested in cross-linguistic diversity. For example, will speakers show a reliable FoR preference in gesture even when not using overt FoR language? One of my fieldwork projects addresses this issue by examining the gestures that bilingual speakers of Juchitán Zapotec and Spanish produce when describing simple, table-top motion events. My collaborators and I ask two questions: (1) Do such gestures reliably reflect a preferred FoR, even though they are rarely accompanied by FoR language? (2) If so, what factors predict the FoR used? The project also examines how the same speakers perform on a variant of the “Animals in a Row” task (Marghetis, McComsey, & Cooperrider, 2014), allowing us to compare the FoR preferences revealed by motion gestures with those revealed by a classic memory paradigm. Ultimately, this work will help us better understand the ecology of spatial language in Juchitán. Is it spatial language *per se* that drives people to gesture and reason in different ways? Or are differences in gesture, memory, and language all driven by some other factor?

Spatial concepts for abstract thinking

Another dimly understood concomitant of spatial language is abstract thinking. The canonical use of spatial language is, of course, to communicate about the concrete—for example, to describe the location and movement of people and objects. But spatial concepts are also pressed into service much more broadly, for construing non-canonical spatial settings and for structuring purely abstract concepts. But which spatial schemas do we call on for these more abstract purposes, and why? An emerging hypothesis is that communities will favor the same concepts for abstract thinking that they favor for concrete spatial reference. Exploring this possibility is one of the primary aims of my other fieldwork project, in the Yupno valley of Papua New Guinea. In Yupno, as in many languages in the interior of New Guinea, *uphill-downhill* contrasts run throughout the core grammar, cropping up in demonstratives, in basic motion verbs, and beyond. Using a variant of the “Man and Tree” task, my collaborators and I have investigated how uphill-downhill concepts are deployed for describing location and orientation outdoors, amid the rugged terrain of the valley. But we have also used the same methods to investigate how the system is used indoors, within the flat-floored Yupno house. Though the houses lack slopes of their own or views of the slopes outside, speakers nonetheless press uphill-downhill contrasts into service, projecting a set of conceptual “slopes” onto the house’s interior (Cooperrider, Slotta, & Núñez, 2016). This is an example of a perhaps widespread phenomenon in which speakers parse objects and settings by projecting their most familiar spatial schemas onto them.

Another line of my work has focused on how people use spatial concepts to think about time, a famously ethereal and ineffable dimension of experience. English speakers conceptualize the past, present, and future through egocentric spatial schemas (Walker & Cooperrider, 2016), but these patterns are not universal. Yupno speakers draw instead on their trusty uphill-downhill concepts, with the future conceptualized as uphill and the past as downhill (Núñez, Cooperrider, Doan, & Wassmann, 2012). In both English and Yupno, these patterns of temporal thinking can be glimpsed in certain linguistics expressions—but, interestingly, they are seen especially vividly in *gesture*. Here again, of course, cause and consequence are tricky to sort out. Do people around the world think about time a certain way because of how they think about space? Or do both habits of thought spring from some other, hidden source?

Outlook

Some of the biggest questions that remain for the cross-linguistic study of spatial language are not about language *per se*. Rather, they are about why we see the diversity that we do and about how this diversity shapes the life and mind of speakers. As we puzzle over these questions in the coming years, a promising tack is to focus on *ecologies of spatial language*, on how spatial reference is interwoven with communication, culture, and cognition. Like other researchers in the field, I suspect that spatial language is a powerful player in these ecologies—a *keystone species*, if you like. But this remains to be demonstrated.

References

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