

The Intersection of Culture and Mind

Karen A. Cerulo
Rutgers University

Note: This paper was presented at the American Sociological Association's Culture Section 20th Anniversary Symposium: Harvard University, July 31, 2008. The presentation is based on a longer article which will appear in a special issue of *Poetics*. The issue is slated for publication in 2010.

Introduction

Twenty years ago we were excitedly talking about a “cultural turn” in sociology. That turn led us down a highway of ideas that put culture firmly at the center of nearly every intellectual destination. Today, I want to focus on a new bend in the road – what, for the sake of beating a metaphor to death, we can call the cognitive turn.

The study of cognition is becoming more and more central, both in the social sciences and popular discourse. I think part of this interest stems from our growing ability to *see* the brain via MRIs, PET scans and the like. But our interest also comes from the slow, steady *re*-discovery that we, as social beings, often think together. Interdisciplinary trends in the social sciences have allowed anthropologists, psychologists, and sociologists to see one another moving together toward an examination of the mind – and an examination that reveals how much there is to learn about the social side of thought.

How can we learn more about thinking together? People have different answers to the question. My particular strategy involves building conceptual bridges between cognitive science and sociology. Today, I'd like to elaborate that approach.

For decades, cognitive scientists and sociologists have behaved as if we have nothing important to say to one another. Cognitive psychologists and neuroscientists stood enthralled by firing synapses, neural pathways, and the changing colors of brain scan images. Sociologists often dismissed these concepts as one form or another of social constructions. So off we went – they with their pictures, we with our practices, boundaries, and lenses, and with few exception, never the twains did meet.

But surely, there are connections to be made—stories that cognitive scientists tell about the way the brain works, stories that sociologists can continue in ways that significantly extend our knowledge about patterns involved in thinking together. I want to present three such examples today, and in so doing, attempt to build the groundwork for a new kind of cognitive sociology.

Example 1: Continuing the Story of Graded Membership

Cognitive psychologists tell us that some of the brain's standard operations are characterized by asymmetry. This is especially true for conceptualization. Concepts, of course, are tools used by the brain to identify and organize people, places, objects and events.

Many cognitive scientists believe that concepts are built on a prototype or a "best example" premise. This means that, at their core, concepts amplify or exaggerate the critical features of a category. They focus our brains exclusively on a category's "ideal".¹ When we encounter something, we use our mental concepts and perform a process called "graded membership." This means we "rank" or "place" entities with reference to others in their class. So when you go shopping for ... say ... a tomato, your brain compares every tomato you see to an ideal prototype... and it works from there. The more attributes that concrete tomato shares with the prototype that exists in your brain, the more likely you are to include what you see in the category tomato *and* the closer you will rank that observation to the category's core ideal.² "Not all tomatoes are equal," Some are just more "tomato-ey" than others.

Graded membership has obvious results for the way in which we evaluate the world around us. The process quite forcefully establishes asymmetry as one of the brain's prominent *modus operandi*. Best case examples of a concept are overemphasized and highly detailed; anything less than the ideal becomes increasingly nondescript, released or distanced by the brain from active consideration.

In my recent book, *Never Saw It Coming* (2006), I argue that graded membership has something to do with a sociocultural process I call *positive asymmetry*. Positive asymmetry is a blind optimism, an unbalanced way of seeing the world. It is a tunnel-vision directed to best case scenarios and an accompanying disregard for worst case scenarios. In my book, I show that most communities consider categories that specify the *best* of people, places, objects, and events as highly relevant, important, and worthy of intense focus. At the same time, they relegate categories addressing *worst* quality to a position of little or no importance.³ Of course definitions of best and worst change from time to time and place to place. But the tendency to prioritize the best is rather constant.

¹ Cognitive scientists' "ideal prototype" should not be confused with Weber's concept of the "ideal type." The cognitive term denotes perfection within a category; it is the best-case example and can, indeed, exist in reality. Weber's term, in contrast, presents an exaggeration of characteristics; the ideal type is used to illuminate the social world.

² Of course, for purposes of illustration, I am simplifying the process. In fact, graded membership entails complex calculations which cognitive scientists continue to study. At this time, for example, there is some debate in the literature as to whether the brain compares observations and prototypes via an additive operation (referred to as the "modal model") or an averaging process (referred to as the average model). For more details, see Solso, MacLin and MacLin (2005).

³ Amidst all the very important contributions of postmodern theory, it is important to note that there are phenomena that generalize across small groups, subcultures, and sociocultural contexts. While it is critical

But perhaps you're saying to yourself right now: why is that practice – positive asymmetry – connected to the brain? The brain has prototypes for bad things or worst cases too—i.e. the perfect storm, the prototypical murder. So how can I say that graded membership and the asymmetry it involves have anything to do with a cultural emphasis of best cases? Well that's where sociology allows us to continue and enhance the cognitive science story. We can map the ways in which society and culture come in, transforming and reconstructing the natural processes of the brain.

Cognition does not occur in a vacuum. The concepts and categories foregrounded in one's mental "data banks" differ with reference to the cultural repertoire of one's group or community.⁴ This foregrounding can be linked to a variety of factors, including a community's survival needs, its goals and values, its relative station in the broader society, its internal power structure, etc. But regardless of the source, the priorities defined by a group or community's culture become institutionalized in the community members' shared stock of knowledge -- the habitus. Different communities prioritize and attend to different categories of people, places, objects and events.

What I'm saying here is that in most communities, cultural practices are at work, practices that, in essence, background half of what is in our brain. These practices harness the brain's propensity toward asymmetrical thinking; they harness the mechanic – the *way* we think – and they encode that process into a much more targeted and specialized experiential bias. Asymmetry – the tendency to emphasize only *the best-case example of any concept*, is transformed to positive asymmetry – the tendency to emphasize *only examples of the best-quality cases*.

What are these cultural practices that so bias our perceptions? In my work, I carefully unpack three sets of practices that function in this regard. I call them *eclipsing*, *clouding*, and *recasting*. I also identify certain structural conditions under which these practices are most effective.

My work on graded membership illustrates one example of a productive cognitive science/cultural sociology merger. In step one we learn something about how the brain operates. In step two we learn something about how social and cultural practices compliment, alter, or elaborate a neural process.

Example 2: Continuing the Story of Domains

The idea of domains is most commonly associated with cognitive anthropologists, developmental psychologists, and cognitive neuroscientists. These scholars define

for sociologists to recognize the differences among and within social groups, it is also important for sociologists to discover the way in which groups and situations are the same.

⁴ While one's culture does not determine *how* the brain operates, it certainly plays a pivotal role in determining *what* the brain thinks about. Put in another way, one might say that the neural *process* of conceptualization is likely universal to the human species, but the *products* of that process are not. For more detailed excursions on this point, see Cerulo (2002; 2005), DiMaggio (1997), or Zerubavel (1997).

domains as knowledge structures in the brain. Domains are a bit more involved than schemata or concepts. They consist of three parts: 1) a given set of principles, 2) the rules for applying those principles, and 3) the itemization of the entities to which these principles and rules apply.

Most cognitive scientists think that domains are specific. Domain specificity means that the structure of knowledge prescribed by domains varies across distinct content areas. Most cognitive scientists also argue that these neural structures are innate. Indeed, some contend that evolution equipped humans (and most other species) with specific adaptations designed to overcome persistent problems in the environment. So brains contain innate modules – some that allow us to reason about objects, others about cause and effect, still others about space, numbers, language, and so on. People promoting this perspective include Noam Chomsky, Jerry Fodor, Lawrence Hirschfeld, and others.

In recent years, some cognitive scientists have been willing to concede a small role to the “external world” in discussion of domains and other neural units, particularly now that evolution is a topic of the distant past and symbolic communication systems are much more central to our intellectual focus. Pasqual Boyer, Gerald Edelman, Frank C Keil and others suggest that domains and other neural elements may be enriched or altered in response to situational factors. One might say that certain situational conditions act as a switch that activates specific domains and de-activates others.

Sociologists have been slow to explore the idea. But we are uniquely qualified, for example, to explore the *ways* actors confine or transfer domain knowledge, the *ways* actors look for resonances between cognitive domains and aspects of real world structure. Such studies could examine the factors that facilitate or impede our attention to these resonances, including certain physical cues, entrenched values, practices, structural configurations etc. We might also explore the specific techniques by which resonance is achieved – i.e. analogy, metaphor, transfer, and the circumstances and situations that favor one strategy over another. Certainly, people like Lakoff have started us on this path, but the work is limited and there is so much more to do.

Most interesting from my perspective is the idea that domains carry expectations, many of which are rooted in the sociocultural world. By definition, they map how the world is partitioned, who and what rightfully belongs in those partitions, and how things within those partitions function. As social scientists, it is important to begin studying how amenable or resistant these expectations are to change. More importantly, we may wish to explore the consequences of violating these expectations.

In earlier work (Cerulo 1988; 1995a: 117-144; 1995b), I explored domain violations with reference to the distortion of semantic, syntactic, and sequential communication formats. I found that under certain conditions, moderate levels of distortion actually heightened the attention and comprehension of message receivers. Indeed, those mounting persuasive communication – for example, in the marketing of products or politics – were more effective when they defied domain expectations.

At present, the topic of domain violation is being explored by those studying religion. This, of course, makes perfect sense. Wuthnow (2007: 345) notes, “Religion is rooted in cognitive processes that violate the boundaries between ontological domains.” Think of it. Most worship a god that in most ways resembles a person but is assumed to be eternal and omnipresent -- a clear domain violation. There are other examples: the resurrection of Christ, the Virgin Birth, among others. All such instances violate our expectations of the ways in which the physical world works.

Domain violations are important to those who study religion because many argue that these violations are what make religion so powerful. Domain violations are more memorable than concepts and images that conform to expectation. Thus, the resurrection or the Immaculate Conception stories are so central and so persistent because they are so memorable. There is research behind these claims. On the cognitive science side of religion, Pascal Boyer and Charles Ramble (2001) conducted laboratory studies in which they presented subjects with domain consistent and domain violating stories, especially stories about gods or heroes. Subjects remembered the domain violating stories with significantly higher frequency than the consistent ones. On the sociological side of religion, Wuthnow (2008) has just completed an exploratory study of prayer recall, finding that people recalled prayers for and about specific individuals, even though they often did not know these individuals. The reason appeared to be a particular form of domain violation – one in which a human person was ritually brought into contact with something wholly non-human.

Here again, in the area of domains, we see opportunities for sociologists to complete and extend cognitive science stories

Example 3. Continuing the Story of Mirror Neurons

Mirror neurons are networks of neurons located in the pre-frontal motor cortex of humans and other primates. They “fire” in response to visual stimuli that require a motor response from humans, primates and certain birds. They also fire when these entities witness or hear others making such motor responses. So the same neurons will fire when I bounce a ball or when I see or hear another bounce a ball. Hence the term “mirror.” In essence, mirror neurons take practical information based on a specific observation and create generalized conceptual knowledge about the way objects “work.” These neurons encode information using a classification scheme that references what an object can do for any actor. That is, instead of knowing what objects are in a decontextualized sense, mirror neurons allow us to know what objects are good for (Lizardo 2007: 22) .

Why are these neurons important to sociologists? Omar Lizardo (2007) contends that mirror neurons may be the link needed to fill important gaps in practice theory. As Lizardo (2007: 13) reports, cognitive scientists contend that mirror neurons provide social actors with 1) the practical capacities for productive of action and 2) “the practical, representation, coding and comprehension of practical action – both for the self and others.” Lizardo (2007:14) continues that story, telling us:

In its ability to generalize from one observed use to other uses and from one sensory modality to the next the MNS appears to be the neural structure that subserves the practical capacity for what Bourdieu (1990) refers to as —bodily generalization where the same set of practical schemes are transposed by the actor from one object to another, and thus to different areas of practice (Bourdieu 1984: 175; 1990: 89).

“Practical transmission,” writes Lizardo (2007: 17), “rather than being ‘little short of magical’ (Turner 2002: 11), is in fact commonplace.” This observation is sociologically important. It means that the most central practical competences constitutive of Bourdieu’s class habitus need not be the subject of explicit instructions or imitation. They can be “picked up” by the actor simply by virtue of being surrounded by other actors who display the same competencies (Lizardo 2007: 19).

By connecting the dots – cognitive science and sociology -- Lizardo doubles the power of Bourdieu’s work. Bourdieu rejected imitation as the means by which we came to acquire practical knowledge, but he had no satisfying alternative explanation for its source. Merging Bourdieu’s arguments with cognitive science emboldens the findings of both traditions.

Conclusion

I’m out of time, so let me conclude by saying that these are not the only cognitive stories that sociology can expand and extend. They offer but three examples of a rich field of ideas waiting to be mined. Let’s get going!

Thank you.

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