Meaning on the move: synthesizing cognitive and systems concepts of culture

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Abstract: Recent developments in cultural sociology have advanced our understanding of the cognitive mechanisms that link culture to action. They have also raised a significant question about whether human cognitive limits are compatible with theories that envision culture as a complex, codified social system. This article describes a theoretical model of culture that reconciles these approaches by focusing on the circulation of meaning through heterogeneous semiotic networks. These networks are conceived as linking cognitive and environmental locations of culture with different information processing and storage characteristics. By specifying the characteristics of these locations of culture and the semiotic mechanisms through which meaning is translated between them, the model aims to provide a theory capable of reconciling cognitive and systems concepts of culture.

Keywords Culture, Cognition, Cultural theory, Interpretation, Pragmatism, Social meaning

There lies an unfortunate gulf between cognitive and systemic concepts of culture. Both the investigation of intersubjective cultural systems (from the big—religion, law—to the small—interaction orders) and of the cognitive dimensions of culture (from the small—social cognition, individual motivation—to the smaller—patterns of neuronal activation) are active areas of research, but between them lies a theoretical haze that makes their relationship uncertain. Are they contradictory? Competitors? Ships in the night? Or toiling at different ends of the same vineyard? The central proposition of this article is that we can achieve a theoretical synthesis that alleviates this hazy middle ground through a processual, meaning-centered theory that fully integrates individual cognition in to a concept of culture as a complex, intersubjective system. Its reconciliation of cognitive and systems concepts of culture, furthermore, fully accounts for the skepticism expressed by some cognitive cultural sociologists about whether systemic concepts of culture are compatible with what we know about human cognition (Lizardo and Strand 2010; Martin 2010). In the synthetic spirit it argues that not only are both cognitive and systems concepts of culture valid, but that their integration provides a powerful framework for constructing cultural explanations that is of particular value in the context of the fractured landscape of contemporary cultural theory.

To achieve this synthesis the article assents to the long insistence by scholars who approach culture from practice, toolkit, and now cognitive perspectives that "culture in action" is a central question for understanding the causality of culture (Swidler 1986; Vaisey 2009). It further assents to the idea that motivation is key to understanding the problem of culture in action and the causality of culture in general (Vaisey 2009; Martin 2011; Reed 2011). But motivation is not an exclusively individual or cognitive dimension of action. The model described here instead adopts the pragmatist view that motivation arises out of a relationship between actors and their social environment (Dewey 1969, p. 129; Joas 1996, p.160; Joas and Beckert 2002, p. 274). It further, and crucially,

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argues that culture exists in and enters in to motivation from both of these locations—the actor and the environment. It does so, however, in different ways, through different mechanisms, and with different consequences for how we conceptualize culture that we must account for both theoretically and in constructing empirical, cultural explanations.

The argument then proceeds to the claim that this revised account of motivation is best situated in a processual, semiotic, and—most importantly—meaning- centered general theory of culture. Of particular importance in this model is the close association that it claims between motivation and meaning, established by drawing on pragmatist accounts of the latter. In jettisoning Saussure as the principal semiotic theorist of cultural systems in favor of Peirce, it is able to view meaning not as a static or stable property, of mind, structure, or anything else, but as an intrinsically processual, emergent occurrence, a semiotic effect that ensues from the interaction of actors and situations. Understood as a semiotic effect, meaning is intrinsically on the move. It is in the movement of meaning and the circuits that it traces that this model reconstructs the notion of a cultural system. Not in the grand synchronic quiet of structuralist imageries—at least not in the first place—but in the sense of a circulatory system, its situational and trans-situational patterns emergent from the constant, "restless" (Wagner-Pacifici 2010) movement of semiosis and the circuits it traces in the situated meaning making of social life. These heterogeneous circuits of meaning provide a framework compatible with both the complexity of cultural systems and with the inherent limits of individual human cognition.

Though the synthesis proposed here offers a specific deep theory of culture, it is one that accommodates many variations in analytical focus, supporting variants of cultural analysis that operate at scales ranging from neurons to civilizations. By declining to anchor culture solely in cognition, or to conflate the two or to choose between them, this approach justifies the existence of different methods for analyzing culture and for describing its properties and effects, from interaction analysis to structuralism to hermeneutics to the investigation of the cognitive semiosis of individual minds. It also facilitates communication between them, creating further theoretical opportunities. Even for those not looking for a wholesale new cultural theory, in addition to resolving the theoretical dilemma posed by cognitive limits and cultural complexity, the approach described here offers a fully processual account of the causality of culture (Emirbayer 1997) built to the degree possible around specified cultural mechanisms (Gross 2009; Norton 2014), that offers concepts and explanatory strategies that may be of value within many different modes of cultural inquiry. By following the circulation of meanings within sociocultural systems we can trace pathways that cross between individuals and social environments, cultural structures and culture in cognition, integrating them into a single analytical field. To avoid falling in to lazy syncretism, however, the article is explicit about the pathways connecting the very different manifestations of culture it aims to connect. It is these pathways that can serve as the through lines of a common theoretical language that casts both the cognitive and the systemic dimensions of culture as manifestations of a unified, consequential, and mobile cultural dimension of social life.

Cognitive and systems culture concepts

In "The Concept(s) of Culture," William H. Sewell articulates the basic description of culture

that I adopt here: it is "the semiotic dimension of human social practice" (Sewell 2005, p. 164). Theory involving this semiotic dimension of human social life is riven, however, as Sewell further explains, by a fissure running between those who conceptualize culture as a system and those who conceptualize it as practice. One of the biggest developments in cultural sociology since Sewell made these observations is that practice theories, and the toolkit conceptualization of culture derived from them, have taken on an increasingly cognitive cast (Lizardo and Strand 2010) concomitant with the general rise of cognitive cultural sociology (DiMaggio 1997; Cerulo 2002, 2010; Vaisey and Lizardo 2010; Lizardo 2007). For its part, the cultural systems approach also includes a range of styles, from structuralism to hermeneutics to interactionism to institutional analysis (e.g., compare Alexander and Smith 1993; Wagner-Pacifici 2005; Mohr and Bogdanov 2013; Patterson 2014; Lichterman and Eliasoph 2014). What these "systems" analytical approaches have in common is their focus on the systemic dimensions of social meaning and "a structural approach to interpretation" (Mohr 1998, p. 345) as their central analytical strategy for understanding the causality of culture. Also characteristic of these approaches is that they attempt, to some degree, to abstract semiotic patterns out from the flow of social life to identify durable aspects of the content and form of intersubjective cultural systems (Sewell 2005, 161).

Though its countenance has changed with the rise of cognitive cultural sociology, the theoretical fissure described by Sewell remains intact, now best understood as running between cognitive and systems concepts of culture. Despite the fundamental differences in these approaches, though, they exhibit a sneaking complementarity, with the theoretical risks of each perspective finding useful corrective on the other side. Cognitive approaches, for example, must be wary of drawing cultural theory too far in the direction of individualism, and becoming so skeptical of the "whole panoply of ontologically spurious anti-cognitive pseudo-objects (e.g., 'relations,' 'networks,' 'structures,'" (Lizardo 2014, p. 988) that they isolate themselves from analytical and theoretical concepts that are essential for conceptualizing the complex interactional fields that define scales of analysis larger than the individual. Doing so would risk losing track of the very things that have made culture one of the defining evolved traits of the human species and such a durable part of sociological analysis.

To be fair, cognitive cultural sociologists are well aware of this risk—the menace of the fMRI-zation of cultural analysis—and have staked out a theoretical ground that attempts to straddle the neurological and the social (Hitlin and Vaisey 2013, p. 61; Shaw 2015). But doing so requires an engagement with more systemic and intersubjective dimensions of culture. On the other side of the fissure, systems approaches have been the subject of the long-standing criticisms of excessive abstraction that approaches like practices, toolkits, and cognition aim to correct. Indeed, Sewell locates the origins of the systems/practice divide in the long hangover from Parsonian and Levi-Straussian structuralist approaches to cultural analysis that dismissed practice as unimportant and exhibited the bad theoretical habit of treating all cultural systems as shared, fixed, bounded, coherent, and deeply felt (Sewell 2005, p. 161). These approaches to cultural systems, at their extreme, shortchanged contradiction, power, and the cultural significance of the concrete realities of social interaction in favor of cultural coherence, shared values, and the identification of cultural systems themselves as the site and source of meaning (Rochberg-Halton 1986, p. 52). It was in to this opening that Bourdieusian practice theory and Swidler's (1986) well-known tool-kit version of it

stepped, noting the multiplicity, complexity, and contradictory character of culture as people experienced it, and turning their attention to the relationship between culture and action and away from the totality of culture conceived as a system.

Don't fear the ether: the implausibility of cultural complexity?

Sewell argues that instead of aiming to resolve the systems/practice debate, "the important theoretical question is how to conceptualize the articulation" between systems and cognitive/practice/toolkit concepts of culture. He reasonably adopts a both-sides-have-a-point approach to this articulation, arguing that there is "an indissoluble duality or dialectic" (Sewell 2005, p. 164) between these positions. But recent developments in cognitive cultural theory pose a problem for this resolution. These developments force the question of whether systems and cognitive approaches to culture might be theoretically inconsistent in so fundamental a way that a dialectical resolution becomes untenable.

Specifically, cognitive cultural theorists have recently extended and intensified familiar practice and toolkit critiques of cultural systems approaches, arguing that complex cultural systems may not be compatible with what we know about human cognition at all, thus calling in to question the very foundations of cultural systems perspectives. Lizardo and Strand have made the most cutting statement of this view, writing that "individuals do not seem to possess... highly coherent, overly complex and elaborately structured codes, ideologies or value systems... These cultural systems are simply too 'cognitively costly'... to be capable of being strongly 'internalized' by anybody. People simply wouldn't be able to remember or keep straight all of the relevant (logical or socio-logical) linkages" (2010, p. 205). They go on to write that those who traffic in such models want us to believe in "some predetermined set of internalized cultural objects which are mysteriously 'downloaded' through unseen, undertheorized, underspecified (and ultimately implausible) mechanisms," from the, "unseen, undertheorized, underspecified (and ultimately spurious) cultural ether." (2010, p. 208). In its most extreme form, the cognitive limits argument is not only that cultural systems approaches are abstractions out of touch with their source material, modern incarnations of the old spooky Durkheimianism of collective conscience floating unmoored in the "cultural ether," but that this is necessarily the case with a theory that posits complex cultural systems. The stringent, biologically given limits of human cognitive processing throw in to question cultural systems models that implicitly assume that individuals perform complex cognitive processing of a sort that human minds are incapable of performing. The cognitive limits argument raises the possibility that complex, codified cultural systems approaches are not moored in the realism of cognition because they cannot be.

Rather than rejecting or otherwise arguing around the cognitive limits thesis, I take the question of whether approaches that traffic in complex, structured cultural systems are consistent with human cognition to be of the highest importance for cultural sociology. The model I propose below aims to reconcile a general theory of culture based on the idea of complex cultural systems with the real limits on individual human cognitive capacity that Lizardo, Strand, and others have noted. To open the theoretical space that I will exploit to construct this model, though, an alternative, more sympathetic statement of the implications of the cognitive limits thesis for cultural sociology is

helpful. In his version of the cognitive limits argument, Martin writes, "I propose that... culture as a complex web of meaning and culture as inside the minds of actors... cannot both be correct, for the simple reason that our minds are not good at holding lots of connected things in them. If one wants to define culture as something complex, then it is not going to be inside of people." (Martin 2010, p. 229). We should be cautious not to underestimate the capability of human minds to handle cultural complexity, particularly when we consider not only the limited processing power of human consciousness and working memory but also the mind's unconscious, latent, and automatic processing power and storage capacities, not to mention its specialized processing faculties for dealing in highly specific and parsimonious ways with both symbols and social interactions (Leschziner and Green 2013). Nonetheless, cognitive limits are real and important for cultural theory. The model described below therefore takes a revised version of Martin's statement of the cognitive limits thesis as one of its postulates: if one defines culture as something complex, and I think we must, then it is not going to be only or entirely inside of people.

The value of this re-stated version of the cognitive limits thesis is that even as it retains complex systematicity as a defining feature of culture, it fully embraces the reality that human cognition is inextricably tied to specific neural and other biological processing mechanisms and that cultural theory, connected to human minds as it must be, needs not only to be consistent with those mechanisms but to integrate them in to its account of what culture is, what it does, and how it works. The challenge it presents is to articulate a cultural theory that can span both the insides and outsides of people. That is, a theory that locates culture in both actors and their environments in ways that are different and fundamentally intertwined. Such an approach, I will argue below, views cognition and cultural systems not as theoretically incompatible, nor, in contrast to Sewell's proposal, as an indissoluble duality or an ontologically warranted dialectic, but as insufficiently integrated parts of a cultural theory that is unified because it must be to account for the complexity of culture given the constraint of cognitive limits.

Culture in action

My starting point for this synthesis is a question more closely associated with practice, toolkit, and more recently cognitive approaches, but one that I believe to be of equal value from a cultural systems perspective: the question of culture in action.

As a prominent way to frame questions about the causality of culture, "culture in action" has had two turns in the spotlight. Its first is in the widely known and cited eponymous article by Ann Swidler (1986). In it she argues against the purportedly Geertzian view that cultures are coherent systems (Swidler 1986, p. 278), suggesting instead that culture is "too multiplex, ambiguous, and contradictory"(Swidler 2000, p. 169) to affect action in a directly causal way as suggested by the concept of motivation. Instead, Swidler proposes that culture at the individual level is more like a set of skills or social tools; people seek out situations that they have good tools for and use those tools to do things like present themselves well or justify their actions or to otherwise pursue their projects and goals. Those projects and goals, however, are not derived from culture in this view (Swidler 1986, 2000, 2008). To be sure, at more aggregate levels of analysis culture, according to Swidler, powerfully shapes situations in the form of codes, contexts, and institutions (Swidler 2000). But

when it comes to individual motivation culture is roughly to social action as a hammer is to pounding a nail: it doesn't cause the action, or provide the goal, but is available to help pursue it in addition to shaping the context in which it occurs.

The second turn of culture in action came with Stephen Vaisey's (2009) likewise widely cited "Motivation and Justification." The title of the article refers to the corrective it offers to Swidler's doubts about the motivating power of culture. Swidler's error, according to Vaisey, is her assumption that cultural motivation must necessarily be a "deliberative, logical affair" (Vaisey 2009, p. 1681), and that therefore only if it is unambiguous and consciously apprehended by an actor should we conclude that culture motivates. But drawing on new insights from cognitive science, Vaisey argues that culture can operate through nondeliberative, largely unconscious mechanisms that do not need to be coherent to motivate. Lashed to cognition, culture motivates from beneath the surface of conscious, deliberative consideration.

Vaisey's resuscitation of cultural motivation poses a dilemma from a cultural systems perspective. By noting that cultural motivation is not necessarily deliberative, logical, or conscious Vaisey brings motivation back to the fore of cultural explanation. But his approach invokes a concept of cultural motivation based on individual cognitive mechanisms that is not immediately compatible with a cultural systems perspective. Yet most contemporary cultural sociologists who adopt a cultural systems approach view the interpretive analysis of cultural systems as essential to the explanation of action (Alexander 1987; Reed 2011)—not as a pursuit of an analytical objective fundamentally at odds to that laid out by Vaisey or other practice theorists. Alexander and Smith, to cite a prominent example, write that their "strong program" in cultural sociology is defined in part by its commitment "to anchor causality in proximate actors and agencies, specifying in detail just how culture interferes with and directs what really happens" (2003, p. 14) They are committed, that is to say, not just to an abstracted account of the systematicity of culture, but to an explanatory model that ties cultural systems directly and specifically to what people actually do—culture in action. Systems and cognition concepts of culture may still be ships in the night, but culture in action can at least serve as a point we know that both have reason to pass.

In order for systems-oriented cultural theorists to make a strong claim, as Alexander and Smith do, to explain causality at the level of "proximate actors and agencies"—"who says what, why, and to what effect" as they put it (2003, p. 14)— however, the concept of motivation must be linked to the systematicity of culture in a theoretically robust way that does not contravene the limits of human cognition. In turning inward to find the mechanisms that reconcile cultural multiplicity and contradiction with cultural motivation, Vaisey's solution is fully subject to human cognitive limits on cultural complexity, making it suggestive but ultimately inapt for theories that claim to integrate complex cultural systematicity and cultural motivation. Quite different possibilities for linking complex cultural systematicity and cultural motivation emerge, however, if we complement the cognitive mechanisms of cultural motivation that Vaisey describes with a turn outward.

Cognitive and environmental motivation

The cognitive dimensions of motivation include aspects of culture that an individual has internalized in some neurally (or otherwise bodily) encoded form that shape their cognitive processing and the

actions that ensue from it. But the environment that confronts a person can equally be seen as a driver of motivation (Alexander 1987). If someone sees that the creek is rising and they decide to run, a full account of the motivation that leads to that action cannot be solely cognitive; it must take notice of the creek. "Why did you run?" a researcher might ask, and the subject would not be wrong to answer: "because of the creek." This idea, that to understand motivation we need to understand not just the individual or their cognitive architecture but also the environment that the individual experiences, comes from pragmatist social theory (e.g., Dewey 1969; Mead 1934, p. 223), and has been given its most prominent contemporary sociological articulation by Hans Joas (1996). Joas' reconstruction of the pragmatist theory of action is in part built on a reconsideration of the idea of "goals"—or to substitute the cognate concept that is my focus here, motivations. Joas argues that we do not enter in to a situation with our goals, normative or rational, already established, but instead that motivations develop through the interaction of the actor and the environment. In this view, hammers can and do motivate people to pound nails; or, less specifically, human social environments have possibilities and demands for action built in to them, and motivation depends on the actor's experience of these elements in the environment that confronts them as much as it depends on the cognitive processing within the actor's mind. Motivation, in this view emerges not from the individual or environment alone but from their ongoing interaction.

This observation, that the environment is a source of motivation and not just its setting or support, is especially important for cultural theory because humans live and act in environments of action that they experience as pervasively and prolifically semiotic; the social universe, as Peirce puts it, "is perfused with signs" (Peirce 1978a, p. 448). Just as much as the mind, the environment is a carrier of culture, a source of semiotic significance as well as a receptacle for it. If the cultural dimension of motivation is roughly its semiotic dimension, then this view holds that we need to look to the semiotic characteristics and contents of both minds and environments, and to their interaction, to understand the sign-drenched character of human experience and to explain both motivation and action.

To substantiate this view that culture influences motivation from both the mind and the environment we need to better specify the claim that culture—the semiotic dimensions of social life—exists not just in our minds but in the social environments that we experience. The distinction between the semiotic dimensions of human life that are the province of culture and what Geertz calls "mere actuality" (Geertz 1977, p. 45) is helpful for this purpose. What distinguishes something that is semiotic, and therefore part of culture, from something that isn't, is whether the thing points to something else, having some significance beyond its physically present characteristics—its mere actuality. As Peirce puts it, what distinguishes a sign is that it "stands to somebody for something" (CP 2.228). That is not to suggest that signs are something distinct from experience or actuality. Rather, they are the parts of experience that involve the mechanism of signification, stand-ins that add things to the "field of experience" (Mead 1934, p. 78; Martin 2003) by evoking things and associations beyond what is otherwise there. Signification depends on a conjuring, a bringing into being of things or relationships that are temporally or spatially distant or abstract or intangible, things not otherwise present or which do not otherwise exist. Signs make "not otherwise" things, relations, processes, ideas, and histories real circumstances of a situation, enmeshing the merely

actual in a layer of semiotic associations, and in doing so making those associations "real in their consequences" as Thomas and Thomas famously put it (1928, p. 572).

The semiotic dimension of social life is thus not etherous or mystical, but a specific cluster of mechanisms that explains why some portions of experience operate differently as causes than an account of their mere physicality would suggest.[2] The concept of semiotic environmental motivation thus amounts to this proposition: we are surrounded by words, images, actions, objects, and relationships, in the physicality of the environment of action as well as in the other people we encounter there who also inhabit and act within it that we grasp semiotically, and these semiotic elements of the environment motivate us just as other aspects of the environment do, as pressing circumstances of the situations we find ourselves in. This proposition suggests a framework that, following Dewey, looks to the mind, the environment, and especially their interaction to understand the sources of the semiotic dimension of motivation.

To better establish how this framework understands motivation, consider a simple example: someone crosses the road in front of a moving car. The car screeches to a halt. Someone makes an angry hand gesture of the "what is wrong with you?!" variety. But who is motivated, and feels justified, to so gesticulate? In one version of this scenario, assuming the cultural system involving right of way is shared, it is the driver who is angered by the pedestrian wandering across the road. In another it is the pedestrian who is angered by the driver ignoring the crosswalk. The physical circumstances, the mere actuality, has hardly changed at all: some paint on the ground. But that paint plays a decisive role in motivating the opposite actions of these two encounters. It is not the paint alone that has this effect, and we can helpfully further specify its motivating power by tracing it to cognition, noting perhaps that the paint "scaffolds" (Lizardo and Strand 2010) cognitive and perceptual neural schemas in the brains of the crosser and driver that encode expectations about who should do what in this situation. We have not, though, found a true cognitive source of motivation merely supported by the environment, for those cognitive and perceptual schemas were themselves developed by the walker and the driver in interaction with previous experiences of social environments that evinced the signification of different sorts of driver/crosser behavior in different environments of action, experiences such as interactions with driver's ed. instructors, police enforcement, previous experience with driving, crossing, and gesticulating, and an urban infrastructure that encodes the meanings of drivers and crossers in to the built environment of the city itself through things like crosswalks and signage—all examples that involve the crossing and re-crossing of signification between minds and the environments that they experience and that through action they often reproduce.

The point I would emphasize from this example is that the motivation for the whole apparatus of rightness and wrongness surrounding pedestrian street crossing, and for the individual motivation to

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[2] Even if their physicality remains central to the semiotic associations they are involved in as with icons (signs that signify by virtue of their physical resemblance to a signifier; an onomatopoeia for instance) and indices (signs that signify by virtue of their physical association with a signifier; smoke signifying fire); while my account here emphasizes symbolic signs (signifying by virtue of convention) for their great sociological significance, the realism of Peirce's semiotic is an important feature in its favor as a framework for investigating the circulation of signs between the materiality of the environment and the mind in contrast to Saussure's narrower ''psychologism'' (Derrida 1981, p. 23).

do things like gesticulate angrily, is best parsed by looking at both individual cognition and the semiotic content of the situational environment that also motivates action. And while in this version of semiotic motivation, environment and cognition are inextricably intertwined, they are clearly, emphatically not the same; both paint and a cascade of neuronal activation are in play, but paint has quite different semiotic properties from neurons, and that difference bears importantly on the problem of cultural complexity.

Motivation and meaning

As this example suggests, cultural motivation is closely tied to meaning. "Reasons are causes" (2008, p. 116), as Reed writes, because meanings motivate: "I walked in front of the car because they were supposed to stop!" is both a causal statement and an expression of an interpretive definition of the meaning of a situation. We can push this statement of the relationship between meaning and motivation further, though, and say that semiotic motivation of the cognitive sort that Vaisey draws our attention to, of the environmental sort, and most especially of the sort that envisions the deep entanglement of cognitive and environmental motivations, can be understood as a specific form of meaning—a meaning that is causal at the individual level (Reed 2011, pp. 135–37). To better specify the cognitive and environmental sources of motivation, as well as their entanglement, then, we will do well to investigate them as instances of meaning. Indeed, a clearly specified theory of meaning, and by association a theory of motivation as a specific form of meaning, is essential for integrating cognitive and systems cultural theories. Meaning can serve as the theoretical nexus linking environments, actors, motivations, and the semiotic dimensions of social life, and the character of that nexus is what renders culture both complex and cognitively manageable.

To shape meaning in to such a lynchpin, though, requires some theoretical commitment, for the concept of meaning can be used for ethereal mystification just as well as for mechanismal specification. This section aims to articulate a specific concept of meaning that can be used to integrate cognitive and systems concepts of culture in a theoretically consistent way. We can summarize the pragmatist-inspired view of meaning I adopt here by way of three simple questions. Meaning is: "What matters?"; "What are you going to do about it?"; and "Why?"

"What matters?" gets at attention as an aspect of meaning (Schutz 1967). When actors orient themselves to some aspect (or aspects) of the deluge of data present in a situation, or some aspect of the situation calls for and receives their attention, we can say that those aspects of the situation are meaningful: the paint on the ground is likely more central to the meaning of the situation than the color of the driver's car, but in other contexts the paint on a car may be more meaningful—a police car for instance. Something that is meaningful is something that we orient ourselves to because it is something that matters.

But to say that meaning is something that matters is also to say that it is something that has consequences. The idea that meaning is not static but consequential puts this approach squarely in the pragmatist tradition. The central feature of pragmatist theories of meaning is their rejection of a representational concept of meaning: the common assumption that meaning is some kind of idea, mental state, or other static representation. The core maxim that inspired the pragmatists rather held

that the meaning of something was to be found in its practical effects, be they mental or effects in the social world. Peirce, for example, writes that the immediate meaning of a sign, i.e., its dynamic interpretant, is to be found in the "actual effect which the Sign, as a Sign, really determines" (Peirce 1978b, p. 536). Mead, in his discussion of the significant gesture, gives the clearest expression of this aspect of meaning as a matter of practical effects, writing that meaning is "what you are going to do about it" (Mead 1934, p. 49).

By shifting the meaning of meaning from a static mental construct or state to an occurrence that happens either in the mind, the world, or both, a pragmatist approach to meaning does two important things. First, it turns meaning in to a processual rather than a substantive analytical category, a concept of central importance in the model described below. Peirce's semiotics in particular holds that the "sign-process" is the source of meaning (Rochberg-Halton 1986, p. 52), making Peirce's conception of semiotics as Rochberg-Halton writes, an "intrinsically processual" theory in which "a sign only has meaning in the context of a... continuous temporal process of interpretation" (Rochberg-Halton 1986, p. 46). The second thing that this approach does is it diversifies what meaning can be. It suggests that meanings can be manifest [to paraphrase Liszka (1996, pp. 26–27)] as actions, events, ideas, physical or mental exertion, as rule-like effects, habits, dispositions, or even in more complex assemblages of signs and in the social regularities such sign systems generate.[3] Overall this approach turns meaning in to a more dynamic, diverse, and potentially complex sociological concept than is contemplated by a theory of meaning that takes it to be a static mental representation (even one that is only momentarily static). It likewise ties meaning more clearly and closely to action—indeed, in the pragmatist view an action can be a meaning: crossing the street in a set place and way is a meaning of a crosswalk, for instance.

These first two aspects of meaning—"what matters?" (paint on the ground) and "what are you going to do about it?" (cross the street here, in this way, with these expectations)—map a concept that is larger than the notion of semiotic meaning most relevant for the study of culture however. They would include, for instance, Mead's example (1934, p. 43) of an attacking dog that matters and has effects for nonsemiotic reasons. The meaning of the dog attack is fully given by its mere actuality. To get at the semiotic dimension of meaning we must ask of "what matters?" and "what are you going to do about it?" a further question: why? Why does this matter and not that? Why does it produce the effects that it does and not other effects? "Why?" has an obvious answer if what matters is merely actual, an avalanche rolling down the mountain towards you say, and what you are going to do is run for it. It is obvious because the meaning is contained in the immediate physical circumstances of the situation. It is not a semiotic meaning. But most of the situations that cultural sociologists are interested in are not so simple because of the pervasive importance of the semiotic dimension of human life to the structuring of human environments and the motivation of action. For instance, the decision to move out of a camp at the base of a steep slope after a heavy snowfall following several warm spring days is also a meaningful orientation to the danger of an avalanche—"what matters?" and "what are you going to do about it?"—but in this case, it is a meaning that

[3] These different manifestations of meaning include elements of what Peirce called the dynamic interpretant, or the immediate effect of the sign, the energetic interpretant, which is the action that can be a meaning of a sign, and the final interpretant, referring to the more temporally and socially extended effects of signs (Liszka 1996, pp. 26–27).

depends on the actor's interpretive experience of the environment in light of semiotic associations linking aspects of the environment to the person's knowledge about conditions that can lead to avalanches—a body of cultural knowledge obtained through cultural experience. So they move because the environmental signs signify, to them, the risk of an avalanche. The source of motivation is semiotic.

And when we ask why they so signify that risk we find our answer not in the relationship of one sign to one object but in the associations among a number of signs including recent snowfall, steepness of slope, hotness of sun, and previously experienced (in an outdoor education class say) semiotic linkages between environmental conditions and risks of an avalanche, as well as with a more diffuse system of signs such as learned meanings about wilderness safety, personal responsibility, and what is involved in being a "good outdoorsperson." Semiotic motivation, in this case as in many cases, emerges from a system of signs [although not, we should note, from its position in an abstract system of signs but rather from its relationship to a system of signs that are actually interrelated for the actor in a concrete situation (Lizardo 2010, p. 652)]. As Peirce writes, "'meaning'... is in its primary acceptation the translation of a sign in to another system of signs" (Peirce 1978b, p. 127). Signs, according to Peirce should be understood in most cases as part of a system—i.e., "a set of objects... that stand to one another in a group of connected relations" (Peirce 1978b, p. 5)—and the meanings of signs are likewise derived from the system of signs that they are inferentially associated with by an interpreter (Liszka 1996, p. 30). These are the "webs of significance" (Geertz 1977, p. 5) through which signs, objects, and meanings are linked in any given situation. The meaning of signs, that is to say, is typically not derived from a single semiotic tie but from a system of signs interrelated, not in the abstract as the structuralists had it, but through the concrete mechanisms that constitute semiosis: the translation and interrelation of signs and meanings by actors in a concrete situation.

Furthermore, for Peirce, the meaning of a sign—its interpretant, its effect on some interpreter—is always potentially itself a signifier. And for it to be a signifier in Peirce's scheme it must be related to an object by some further interpretant/ semiotic effect, and so on, in an ongoing process of meaning, "unlimited semiosis," at least so long as there are interpreters to pick up the signs and hurl them in to new sign-object-interpretant combinations and instantiations (Cossu 2017, p. 78–79). From this perspective, then, it is an interrelated system of signs, such as the hotness of the sun, the newness of snowfall, the steepness of the slope, and what you remember about risk factors from that avalanche safety course you took, that makes you experience the meaning of a beautiful sunny day in the mountains as fear and danger. In this approach to meaning, the "why?" of meaning and thus motivation involves an experiential grasp of some portion of an interrelated system of signs existing in the mind (and potentially across many minds in cognate ways) and in the environment that mutually influence one another's effects, i.e., what they mean.

An important point with respect to the problem of cultural complexity and cognitive limits that I will return to below is that this approach to the systematicity of semiosis actually envisions two related notions of a cultural system. One is the systematicity that is experienced by actors as actually inferred semiotic associations. This is the level of local meaning, the actual associations that

participants in a situation make, individually and through interaction, and that make fear and danger the actual meaning of the situation that they experience. Already at this level of analysis it is the case that the concept of systematic local meaning does not insist that any one individual consciously or even unconsciously infers all of the semiotic associations that describe the local system of meanings. The full system of associations that makes fear and danger the actual meaning of a concrete situation for any given group may, for instance, emerge in a conversation between two people, neither of whom is alive to all of the associations that generate this meaning on their own but who are jointly motivated by the semiotic system that undergirds their experience of fear on an otherwise lovely day through ongoing, meaning- generating (including memory-jogging) interaction with one another and with the environment.

Local meanings, though, can also be understood as a more or less likely subset of the semiotic associations in circulation among the enculturated population in general. In this more analytical sense, a cultural system is a probabilistic description of consequential associations that people entangled in those semiotic webs are likely to make on average and that are thus likely to emerge as a pattern across multiple iterations of similar situations or social contexts. A cultural system in this more generic sense is a pattern in the complex and often cacophonous (Norton 2015, pp. 54–65) circulation of semiosis among people and social environments; it is a probability function that allows us to assess the likelihood of certain local formulations of meaning and to explain them, even given the inevitably jumbled character of local meanings in concrete situations where interconnections with other meaning systems, interruptions, misunderstandings, and contradictory or rivalrous systems of semiotic associations, and other complications exert their influence over the meanings that actually occur in any given situation.[4]

Circulation and translation

One of the central theoretical features of the concept of meaning just described is that it is intrinsically on the move, described by myriad processual pathways within and between cognitive and environmental manifestations of semiotic meaning—from features of perception and cognition such as memory, emotion, conscious deliberation, and unconscious processes, to action, performance, materiality, interaction, and back, stitching together the patterned associational linkages that constitute a cultural system. It is this mobile aspect of meaning that serves as the connective tissue of the model I want to consider here, with the circulation of meaning linking the varied manifestations of culture in the environment and mind and thus underwriting a cognitively consistent theory of cultural complexity.

Culture, in this view, tends to be both complex and heterogeneous and those two characteristics are theoretically linked. It involves semiotic circuits that move, through effects, back, forth, and within minds and environments. These semiotic circuits can and do split in to divergent trajectories, combine, conflict, proliferate, and persist in different forms with different information densities and

[4] Just as it does not assume the sanitized reproduction of codified average semiotic inferences in actual life, nor does this concept of a cultural system assume that individuals must be alive to all elements of a general cultural system in order to reproduce the patterns of meaning that define it, either individually or even in interaction. In the most robust cultural systems, for instance, typical patterns of meaning can be produced by many of the associational subsets of the general cultural system, strongly overdetermining local meanings.

durations. Because the model envisages culture as an ongoing process of semiotic linkage, no single location touched by a semiotic process must contain or comprehend a full map of the entire cultural system they are part of, with that full complexity instead manifest at the level of the circulatory integration of culture across different environmental manifestations and between many minds. And by describing heterogeneous (Latour 1996, p. 373) circuits of meaning that link different people and different aspects of the environment, these circuits include fundamentally different information storage and processing properties than are possessed by any individual mind operating in theoretically imposed isolation. Furthermore, this model has direct bearing on the question of cultural complexity and cognitive limits. In it the theoretical complexity of a cultural system is not limited to what individuals can cognitively manage. Rather, it is limited by what the combined characteristics of the minds and environments that constitute and participate in it can manage, as well as by the characteristics of the mechanisms of circulation that link them. It is because this model envisions culture as processual and heterogeneous that it can also envision culture as complex even given the constraints of individual human cognitive limits.

The key to theorizing complex cultural systems, and specifying their central mechanisms, then, lies in the conceptualization of these semiotic linkages, the characteristics of the different locations of culture that they connect, and the effect of these characteristics on patterns and systems of semiosis. Peirce offers a valuable general tool for this task in his insistence that semiosis is always a translation. "Meaning," writes Peirce as cited above, "is the translation of a sign in to another system of signs" (1978b, p. 127) Or as he puts it elsewhere: "the meaning of a sign is the sign it has to be translated in to" (1978b, p. 132). Translation for Peirce occurs whenever a sign is interrelated through an interpretant—i.e., a meaning, a semiotic effect—with a new system of meanings.

While Peirce intends his concept of translation to communicate a purely formal aspect of semiosis (i.e., an aspect of the formal relationships between signs irrespective of the specifics of their production and interrelation [Liszka 1996, pp. 1–2, 17]), it is helpful to consider it in a more specific, and mechanismally specified context for the purposes of the theoretical argument I am constructing here. The concept of translation is particularly valuable in the present context for conceptualizing the differences between actors and environments as locations of

meaning and culture. The passage of meaning between and within actors, environments, and back, is an ongoing process of translation between radically different information storage and processing systems, with each location operating in different ways, and with different properties and capacities for further processes of meaning making (on translation see also Alexander 1987, p. 297; Hutchins 1995a; Latour 2007).

In order to finish this sketch of a circulatory and translational view of culture, and to better pursue the implications of its claim that the complexity of culture sprawls out among heterogeneous mental and environmental locations, we need to account for the specific mechanisms and consequences of circulation and translation among these different locations of culture. Specifically, an account of semiosis that sees actors and environments as informationally heterogeneous locations that are interrelated through the circulation and translation of semiotic meaning requires a discussion of three elements: (1) how the characteristics of the mind (and especially cognition) affect semiotic

translation and circulation; (2) how the characteristics of the environment (and especially the social environment) affect translation and circulation; and (3) how minds and environments interact (through mechanisms like social performance and socialization) actuating the circulation of signs between these very different locations. The next three sections sketch several key points on each of these aspects of cultural circulation and translation.

Culture in the mind

How do the characteristics of the mind shape the translation and circulation of signs that transit it? Or influence their content, character, and causality? The culture and cognition literature, drawing from the work of cognitive scientists and psychologists in its exploration of the characteristics that define cognition and the brain as a location of culture, speaks directly to this question. I will here only note a few of the major themes from this interdisciplinary exchange that are most relevant to the present discussion.

In a general sense, the defining feature of the cognitive location of culture is that it must ultimately be reducible to patterns of cellular activation (and other biophysical mechanisms.) Lizardo (2007) provides a good example of this perspective and its implications in his discussion of the role of mirror neurons in processing and learning cultural practices that actors observe. The complexity of the patterns and forms of information processing that occur within the biophysical substrate of our brains, however, is often so great that for many research purposes it is better conceptualized in terms of higher-level brain processing centers and capacities. The most obvious of these is our capacity for deliberate, conscious mental processing. As the cognitive limits thesis suggests, however, this ability is sharply limited in its capacity for managing information, including cultural information (Collins 1981; Lizardo and Strand 2010; Martin 2010). For instance, the best estimates suggest that we can only handle around four chunks of information at a time in short-term information processing tasks (Cowan 2001), putting even a modestly complex system of semiotic associations out of reach of this mode of thought at any one time.

But the existence of multiple specialized cognitive information processing systems, many of which involve important sociological and cultural capacities, significantly complicates this picture. For example, language, an obvious and important part of culture, involves capacities located in a number of specific and identifiable regions of the brain that handle tasks like the semantic processing required for comprehension and the grammatical encoding required to express oneself intelligibly in a language (Christiansen and Chater 2016; Kim et al. 1997). Other recent research that dovetails with the cultural sociological interest in narratives, for example, suggests the importance of the default mode network in the brain for developing "long-timescale history-dependent [neural representations]" of complicated, temporally extended semiotic content like narratives (Simony 2016), another task that adds complexity to cognitive semiotic processing but is handled by specialized neural networks rather than the sharply limited capacity of working memory. Yet other recent developments suggest that humans possess specialized neural circuitry for parsimoniously and unconsciously handling the complex task of facial recognition by processing and combining a multitude of facial characteristics so that we can, in most cases, seamlessly recognize people and facial expressions. Even though these tasks appear to involve the computationally intensive

interrelation of multiple simultaneous measurements of distances between facial features (Chang and Tsao 2017), humans possess specialized neural processes that handle this socially crucial—and semiotically complex—task in a way that does not involve the phenomenologically silly idea that we must consciously classify the people who we encounter in the social environment.

And these are just a few of the many socially relevant processing centers in our brains. More generally, one helpful summary view of the cognitive location of culture is the notion that it stores and processes information through associational networks, described by Shaw (2015, p. 77) as patterns of associated neural content such as memories, feelings, images, and habits that are linked and activated in response to some stimulus. Shaw's work reflects a model from cognitive neuroscience suggesting that our brains work through cascading patterns of associative activation (Payne and Cameron 2013, pp. 222–223), a notion that fits nicely with the more general circulatory semiotic model of culture described here, and helps to conceptualize the circulation of semiosis at the level of the individual mind. Another important general concept for understanding the mind as a location of culture that has received deserved attention in the cognitive cultural sociology literature is the distinction between deliberative and automatic cognition (Cerulo 2002; Vaisey 2009). There is a consensus in cognitive science that the vast majority of cognitive activity occurs outside of our conscious awareness. We should expect, then, that most of culture will be located out of view of our consciousness and instead subject to automatic processing, (although as Leschziner and Green (2013, p. 116) argue, this point has perhaps been over-accentuated and the significance of deliberate, non-dispositional aspects of culture and cognition should not be underestimated).

Other important dimensions of the mind as a location of culture include phenomena such as emotions and moods (Silver 2011), embodied dispositions, cognitive schemas, "that integrate culture in to automatic mental routines for information processing and action" (Vaisey 2009, pp. 1685–1686), and perceptual patterns. Habit is another important cognitive location of culture (Dewey 1922; Camic 1986; Martin 2011, pp. 258–267), supplying motivations to many of the routine situations that we experience. Long-term memory is another such specialized location, involving an indefinitely large storage reservoir for memories of situations that have culture embedded in them and can be activated in association with the present circumstances that a person is alive to. Short-term or working memory is another, which can be decomposed further in to phonological and visuo– spatial short-term memory facilities, each involved in grasping the relevant aspects of social situations and storing them at the time-scale of meaning making, including semiotically relevant aspects (Baddeley 2012).

One of the reasons that it matters where culture is located, and matters that the mind as a location of culture can be further decomposed into this complex array of largely unconscious mental processes is that each of these sites has different characteristics that shape the further actuation and circulation of meaning. A "mental" or "cognitive" meaning can, in this view be a range of things, from a memory to linguistically formulated thoughts to a feeling. It matters that culture in the mind is largely non-discursive and automatic, for instance, because the mechanisms that are activated in the perpetuation of the movement of semiosis through and within our minds and brains shape the trajectory and effects of that circuit – and thus the meanings that are possible and that actually

occur.

Culture in the environment

In his discussion of distributed cognition, Hutchins writes that, "the cognitive properties of... distributed systems can differ radically from the cognitive properties of the individuals who inhabit them" (1995b, p. 265). The general point of this section, in complete accord with Hutchins but turning his insights toward culture rather than a distributed account of cognition, is to emphasize that in incorporating the environment in the circulation of meaning as a location where semiotic associations occur and can be stored, we have added capacities to those circuits that differ from the mind in important ways, from their durability to their semiotic density to their accessibility for incorporation in to further semiotic circuits. I will focus on two general aspects of the environment to organize this discussion of its consequences for cultural systems: the sociality (Joas 1996, pp. 184–195) of the environment (that is, the presence of both socially constructed elements of experience and the interconnection in the environment of multiple people who are themselves each enmeshed in their own distinctive semiotic circuits) and its physicality.

One of the most obvious and central sociological features of the environments that we experience is that they can and often do include other people. This intersubjective character of the environment may seem to be better placed in the mind section, as other people are also beset by the cognitive limits and other characteristics described in the previous section. The reason that the environment is the theoretical space to conceptualize the cultural significance of other people is that it is the location where the semiotic processing of other minds becomes accessible to us in the actions of others as well as in the more complex social constructions that emerge from patterns of interaction. It is only as they are translated in to the environment, whether as utterances or other gestures, unconscious habits, in bodies, or through other perceptible signs that the cognitive processing of other people becomes available to our experience.

The social environment, in this view, becomes a semiotic nexus in to which the outcomes of cognitive processing on the part of potentially many people are translated into forms that can be experienced by others and where they can be combined and joined in to more complex intersubjective circuits of meaning. This applies to each individual other person as well as to much larger aggregations of people acting in mutually oriented ways to produce more complex intersubjective and temporally durable constructions such as, to use Gross' (2009) example, banks or other complex institutions. Another way to put this point is that it is through the mechanism of the translation of cognitive processing in to intersubjectively accessible forms in the social environment that simultaneous processing—and even parallel processing by people whose interpretations are coordinated to achieve complex, intersubjective interpretive tasks—becomes possible, raising the semiotic processing and complexity limits imposed by the character and constraints on individual cognition.

The environmental dimension of semiosis is also characterized by the translation of signs in to nonhuman physical forms, further diversifying the properties of semiotic circuits (McDonnell 2010). In the environment, semiotic circuits incorporate physical objects and relationships of all sorts. Some are inhuman in origins but incorporated in to our signs, like the moon or the Grand Canyon,

many others, though, are the products of prior circuits of semiosis, ranging from spearheads to houses (Bourdieu 1970; Durkheim and Mauss 1963) to sewers (Norton 2014) to agricultural fields (Geertz 1973, p. 91) to currency (Zelizer 1994) to complex "technological infrastructures" (Domınguez Rubio 2015). This heterogeneity of traces left by prior semiosis is possible because of a key feature of the environment as a location of culture: its plasticity. We are able to shape our environments in a nearly endless range of ways, leaving traces that are experienced by ourselves and others as signs, and so liable to be incorporated in to further semiotic circuits and the new combinations that they entail.

Just as characteristics like the limits of working memory are important elements of the cognitive location of culture, the diverse physicality of the semiotic dimension of social life is an important theoretical observation because different manifestations of culture in the environment exhibit a wide range of different possibilities for information storage, processing, accessibility, and dissemination (McDonnell 2010). There is a fundamental difference in the characteristics of a human sacrifice, an oral narrative, a book, and a video game in terms of their information density, durability, and accessibility, for example, as well as other qualities of the experiences they can give rise to, and this impacts the ways that people can and do access, interact, and incorporate them in to further semiotic circuits.[5] The information properties of the social environment are, simply put, fundamentally different than the information properties of the mind, and more heterogeneous as the circulation of signs touches on so many different media and incorporates so many different forms with so many different qualities as they relate to the semiotic dimension of social life.

Taken together the sociality and distinctive physical possibilities for semiotic representations and associations in the environment play a central role in underpinning the complexity of culture because they make it possible to accumulate and assemble the performances that translate meanings from the mind to the environment in a way that enables combination, storage, and proliferation. Because the world can and does store the translated traces of meaning making, often in accessible ways, we are surrounded by social environments prolifically emblazoned with the traces of earlier circuits of semiosis, intended, unintended, unconscious, and accidental. And for the same reason it is likewise abundant in its offerings and demands for further semiotic circuits, confronting actors with motivating environments that contain multitudes of semiotically evocative things and occurrences, from landscapes to books to buildings to institutions. It is because social environments can host multiple, simultaneous, temporally extended, physically and semiotically heterogeneous circuits of meaning that they play so important a theoretical role in underwriting the complexity of culture.

Semiotic experience and action

The previous sections sketch some of the characteristics of the mind and environment that necessarily influence the character, content, information density, and complexity of the semiotic circuits that move through them. The mechanisms that translate between these different locations of culture also play a central role in the circulatory model described here. Drawing on Dewey and Joas,

[5] For a closely observed account of the complex, heterogeneous, cognitive and environmental, temporally extended, intersubjective semiotic circulation and translations involved in the authorship, production, and dissemination of a novel see Childress (2017).

as well as on Martin's Explanation of Social Action, we can adopt the general theoretical categories of experience and action to conceptualize the translation of signs from the environment to the mind and from the mind to the environment, respectively. Experience and, especially, action have long histories in sociological theory. Rather than recapitulating those histories I will draw strategically from them to sketch this part of the theoretical scheme that I describe here. In particular I will focus on the semiotic dimensions of experience and action.

Generally, I understand experience as arising from the embeddedness of the organism in an environment; it is what it is like to be the sort of organism that we are (Nagel 1974; Reed 2011, p. 89) in the circumstances that confront us. Or to borrow an apt phrase from Goffman, experience is what we are "alive to" at any given time (Goffman 1983). And in the case of humans, experience is deeply and routinely, though not exclusively, semiotic.

In conceptualizing experience, Martin has further developed Bourdieu's argument (Bourdieu and Wacquant 1992, pp.127–128) that there is an "ontological complicity" between humans and the social environments in which we live, meaning that we are cognitively and otherwise adapted to experience our environments of action in a way that produces useful information about those environments for human organisms (Martin 2011, pp. 312–315). That is to say, human experience is the result of our adapted ability to perceive actual characteristics of the environment that are important to human life (Deacon 1997). For humans, the idea of ontological complicity necessarily extends to complicity between the semiotic characteristics of minds and environments, in that for deeply social and semiotically capable homo sapiens we must be able to experience the semiotic character of the environments that we live in to survive and thrive. The fact that humans experience the world in a way characterized by a striking zeal for grasping the world in semiotically meaningful ways is no accident, in this view, but a result of the fact that we are ontologically complicit with a social environment that is in fact deeply and consequentially semiotically structured.

This image of humans as zealots for experiencing signification can be construed in a way that raises significant complexity concerns, particularly if we adopt what Martin (2011) calls a "grid of perception" theory of cultural interpretation that imagines the actor to perceive the world in a raw, unfiltered, pre-semiotic way that we then parse using cultural categories. Interpretation in this view becomes a post-experience mental categorization exercise that fits the raw, unformed perception of the world in to the categories that render it meaningful—the exact sort of complex calculation that runs most quickly afoul of human cognitive limits. Martin (2011) argues compellingly against this view of interpretation. The model described here, though, makes the different assumption that experience itself is interpretive. We do not, in this view, experience the world then render it meaningful. Rather, we experience the world as semiotically meaningful. Experience itself is the semiotic translation of signs from the environment to the mind. As Martin writes, our perceptual system, "grasps information from our surroundings that we need for action and translates this information into meaningful wholes that we care about" (2011, p. 165), an observation that we should extend to the semiotic dimension of experience.[6] Recent integrative work in linguistics

[6] This view, however, should not be confused with the idea that cultural or linguistic categories shape our perceptions of the environment. As Martin argues (2011, pp. 130–38), there is no evidence that culture shapes our basic percepts, that is, our

provides a good illustration of this claim, suggesting that our brains are inherently capable of perceiving symbols in light of the relational systems that render them meaningful. We do not hear phonemes and then process them, but rather, we experience sequences of phonemes and their grammatical relations holistically as meaningful semantic expressions. That is to say, when we experience language we grasp the whole system of relations that gives the linguistic symbol its meaning; it would not otherwise be meaningful for us (Christiansen and Chater 2016, p. 94). I suggest that this model is a useful one for thinking about semiotic experience more generally, not an experience of meaningless bits that we then assemble, but experience as an ongoing interpretation about what matters for us in the world, which for humans nearly always includes the semiotic dimensions of that world.

Experience, then, in this model—the general theoretical category for understanding the translation of signs from the environment to the mind—is not an experience of mere actuality to which we add meaning but is rather a direct grasp of meaning, i.e., an interpretation. Rather than dodging the problem of interpretation through an underspecified process, I think that this understanding of interpretation as an experiential grasp of meaning instead suggests an important part of human ontological complicity with the environment of action: semiotic automaticity. The interpretive experience of even complex semiotic systems, in this view, need not run through conscious, deliberative, or intentional thought. What this means, that our experiential grasp of complex semiotic meanings is cognitively manageable and occurs unconsciously in most cases, is that our experience of the semiotic character of the environment of action, our experience of the world as meaningful, in most cases occurs as automatically and unavoidably as breathing. For instance, dear reader, please look at but do not read the following word: elephant. It is something like the impossibility for most to complete this simple task that I think captures the automatic nature of semiotic experience. It usually does not require conscious effort to decipher the semiotics of experience, even if it is an interpretation of a bit of experience drawn from a semiotic system as large and complex as a language and clearly requiring advanced cognitive capacities; by the same token, though, that experience is itself a unique interpretant that does not exactly replicate the sign or sign system that gives rise to it so much as it translates it in to a new system of associations, as Peirce has it. Interpretation is always a translation, and interpretive experience can involve a translation from greater to lesser semiotic complexity. Tears upon the pronouncement of a legal decision, for instance, involve a simple, powerful, individual-level translation of a moment in a process that involves lengthy, complex, and codified semiotic circuits; the experiential meaning of semiotic complexity is not itself, in most cases, complex, though it is directly and causally connected to that complexity through specific experiential mechanisms of semiotic circulation.

One further concept introduced by Martin is helpful in conceptualizing both the semiotic character of experience and the semiotic character of action. Martin notes that we experience a world that is "funded," which is to say, it is a world that contains things and relationships with

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experience of the mere actuality of the world, which appears to be based on culturally invariant cognitive and other perceptual characteristics. What I am suggesting here is that we also experience the semiotic linkages that makes culturally invariant percepts meaningful, which can be culturally specific. Culture does not get to basic perception, but does still assign the associations that determine the meanings that percepts take on.

qualities that are independent from their perception. The semiotic qualities of the world, that is to say, are real qualities that influence (though do not fully determine) the nature of the experiences they cause (Liszka 1996, pp. 20–24; Martin 2011, p. 186; Rochberg-Halton 1986, p. 13). Experience is experience of "general phenomenologically valid social objects that constitute a terrain of action" (Martin 2011, p. 336), an observation that again extends fully to the semiotic dimension of experience: many of the semiotic

relationships that we experience are utterly real parts of the terrain of action, the environment, that we experience. We do not need to invent, imagine, or interpolate them through post hoc interpretative consideration. Nor do we, as Lizardo and Strand worry, need to keep straight all the relevant semiotic linkages. For they are available to us, indeed, confront us in our experience as real, phenomenologically stable and intersubjectively valid aspects of the social environment. The complexity of a legal code, for instance, exists as a system of semiotic relationships that are available in the social world for us to experience (through the experience of reading a book for example, or through court judgments and the real circumstances they cause) even if our experience of all the semiotic meanings that the law could possibly offer is necessarily limited to those experiences that we happen to have.

The funded character of the world is also important for conceptualizing the part of semiosis that moves from the mind back in to the environment: semiotic action. The sense of social action that I will focus on here is effort (Alexander 1987, p. 296) that involves the translation of some interpretant in to an environmental effect. This excludes purely mental semiosis (the thinking of thoughts say, which while indubitably an important form of semiosis does not involve a mind to environment translation). On the other hand it includes habitual and other non-purposive action that some exclude from the theory of action (Camic 1986). Following Vaisey, purposiveness and deliberateness are not necessary dimensions of the cognitive manifestation of culture and should likewise not be taken as necessary dimensions of its translation in to the environment. It is worth noting that a number of concepts in use by cultural sociologists already attend to and specify different dynamics of semiotic action as conceptualized here. The idea of social performance, for example, whether one follows Goffman, Butler, or others (Alexander et al. 2006; Austin 1976; Butler 1989; Goffman 1990) is at least partly about the translation of meaning from the mind in to the environment, as in the performance of typified aspects of gender or the performance of a particular social role.

Because the social world is "funded," when we act in semiotically relevant ways we are translating signs in to a social environment that already has semiotic qualities that may afford (Gibson 1979), resist, suggest, demand, shade, or otherwise influence what we do and the meanings what we do might have for us and for others. Semiotic action always involves a translational integration of signs in to an environment already structured by signs (and other people involved in their own circuits of semiosis) that are relatively autonomous from us. The social environment thus supplies certain possibilities for semiosis, enforceably demands others, and constrains yet others as un-makeable under the circumstances. In this sense, the Meadian question of meaningful action, "what are you going to do about it?," is always tempered by another pragmatic question: "what can you do about it

(in these circumstances)?" We have returned, then, to the idea that the semiotic character of the environment plays a key role in motivating action—by instigating action through its meanings as well as by shaping the context and possibilities for what actions can be taken, and with what meanings.

Cultural complexity and systematicity

In this section I will directly address how the circulatory model of culture described thus far purports to resolve the cognitive limits and cultural complexity problem and identify several theoretical consequences of that resolution.

Central to this proposed resolution of the cultural complexity and cognitive limits dilemma is the claim that even if individual minds cannot hold all of the semiotic associations of large and complex cultural systems, and even if they do not process information in a way that involves the deliberate, conscious use of culture to decode experience or to guide action in ways that encode it in to existing meaning systems through conscious calculation, we can and should still think about cultural complexity and cultural systems because individual minds are but nodes in the heterogeneous circuits of meaning that actually constitute culture. To summarize this relationship, individual minds make semiosis possible—rocks don't do signs— but the environmental location of culture—with its heterogeneity and its capacity to integrate the outcomes of simultaneous processing by multiple humans at any one time and across situations—makes semiotic complexity exceeding the limits and qualities of individual mental processing not just a possible dimension of culture but a necessary part of any cultural theory. The individual mental and cognitive manifestations of culture are important for conceptualizing culture in action, and indeed cultural circuits would not exist if they were not constantly crossing and re-crossing individual minds capable of experiencing the world and acting in a semiotic mode, but each individual mind nonetheless has but a partial and particular perspective and endowment of possibilities for semiosis and always operates within its limited cognitive scope. The environmental location of culture adds fundamentally different storage and processing possibilities, such as possibilities for dense, long-term information storage and possibilities for interaction with multiple people, or even mass audiences, who present different possibilities for semiosis and who can process signs collectively in interaction with others. Because the associational semiotic networks that constitute culture in this model extend beyond the brain to the environment, the limits on cognition are not decisive in limiting cultural complexity. Rather, that complexity depends on the overall system architecture, a theoretical imagery that makes sense because of the constant "restless" movement of meaning that interrelates nodes, each incapable of handling the complexity of the entire system but capable of driving further semiosis, through constant circulation and translation.

One apparent theoretical problem with this resolution is that it appears to address the puzzle of reconciling complex cultural systems with cognitive limits by redefining what is meant by a cultural system. It is certainly the case that the view that I have articulated here is inconsistent with the meaning of "cultural system" as defined by Parsons. In Parsons' view, the culture system is distinct from the action system, while here they are integrated. Furthermore, while Parsons holds that a culture system "is both non-spatial and atemporal" (Parsons 1949, p. 763), the view described here

provides a specific account of the spatiality and temporality of culture. Apropos of temporality, while I have described an inherently processual account of cultural systems, Parsons writes that "culture systems... are not involved in process" (Parsons 1949, p. 763). The functional, coherent systematicity and the purportedly universal causality that Swidler and other culture theorists have railed against the Parsonian cultural systems thesis for is, I hope, nowhere to be found in this concept of cultural systems. The model described here, for instance, has no trouble accepting contradictions within a cultural system or between cultural systems, and fully accedes to the view that cultural causation is necessarily conjunctural and partial, even as it insists that the causal effects of signs that "stand to one another in a group of connected relations" (Peirce 1978b, p. 5) is real and cannot be deduced or derived from any other aspect of social life.

The approach described here likewise diverges sharply from structuralist concepts of cultural systems derived from Saussure and Levi-Strauss. In the Saussurean approach, "the conventional system, not particular instances, is the locus for meaning" (Rochberg-Halton 1986, p. 54). Cultural systems, in this view, are taken to supply the "systematically structured relations to other symbols" (Sewell 2005, p. 164) that constitute meaning. The pragmatist-inspired approach to cultural systems that I am advocating here, though, tips this framework on its head. Specifically, relationships between signs in this model emerge in their systematicity through action. In this view patterns of semiosis are not manifestations of "deeper" cultural structures. Indeed, cultural structures in this view are nothing more than a probability function of the actual interrelationships produced by semiotically oriented experience and action in concrete social situations: the circuits of meaning not immanent in structure but patterns that are emergent from what people say, think, do, and experience, from how their environments respond in turn, and from how those physical and cognitive semiotic effects recur in discernible patterns across situations (Lizardo 2010). The metaphor of "deepness" for conceptualizing the durability and commonality of certain formations of culture that maps well onto the Saussurean relationship between system and specific manifestation, langue and parole, yields to the different metaphors of "broadness" and "durability" with repetition across the space and time involved in a particular semiotic circuit, and a concomitantly higher probability and frequency of experiencing a particular cultural formation, increasing its likely salience in other and future contexts. The adoption of structuralist analytical strategies, such as the analysis of cultural codes or binary structures, I would note, remains defensible under this model as a method for identifying aggregate formal features of causally significant patterns of semiosis even if they are not cognitively mobilized as structures by individuals.

We can and should also ask where this approach leaves cognitive cultural sociology. In my view it negates the possibility that cognition can be understood as the sole microfoundation of culture because cultural systems include elements and relationships ontologically distinct from cognition and that don't share its limits. It therefore promotes an outward-looking posture for cognitive cultural sociology, providing a theoretical framework for integrating the cognitive manifestations of culture with the environmental and intersubjective manifestations more traditionally the focus of cultural sociologists. It likewise specifies a slate of mechanisms that allow cultural sociologists to incorporate cognition in to their analyses in theoretically consistent ways. The model likewise sharpens what cognitive cultural sociology brings to cognitive science, embedding cognition as it does in complex,

heterogeneous circuits of semiosis in which cognition plays a crucial role, but also a partial one. The node, in this view, whatever its fascinations or importance, is not the network.

Conclusion

The premise of this article is that, by examining the locations that circuits of meaning traverse and the main mechanisms of those circuits, we have the makings of a cultural theory that can reconcile cognitive limits and cultural complexity. It is admittedly a noisy, messy, probabilistic, and potentially inchoate understanding of the systematicity of culture. But it is also one that is lodged in a plausible model of the semiotic dimension of human cognition, assuming no more of individual minds than they can actually do. It does not presume that the mind is engaged in the constant discursive and conscious processing of the entirety of experience through a vast grid of codified differentiations to achieve meaning, or an implausible "downloading" of files that are too big and complex to be of much use. Such patterned manifestations of the systematicity of culture are rather understood as emergent properties that are analytically useful to identify, often best achieved through the use of structural, hermeneutic, or other system-analytical techniques, but which should not be divorced from their origins in the concrete situational reality of semiosis driven by human minds that are limited and specific in their relationship to the signs and semiotic systems that envelop them.

Culture in the world and in the cognitive agent are manifestations of the same phenomenon, in this view, but they are very different manifestations that demand different analytical techniques. Structural analysis at scales from cultural systems to interaction orders is a good way to order the cultural complexity of the social world, just as cognitive cultural analysis at scales from the cognitive dimensions of interaction to patterns of neuronal activation is a good way to approach the specific formulations of culture that define human cognition and the proximate semiotic circumstances of action. Contra Sewell's claim (2005, p. 164), though, this dialectic is a soluble one if the analytical circumstances warrant it, and the model described here provides a description of the mechanismal pathways that cross this ultimately bridgeable analytical gap. In doing so it aims to provide a conceptual map of the shared territory of cognitive and systems concepts of culture that will enable us to better follow circuits of semiosis as they move through minds to environments and back via pathways that are distinct and intertwined.

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