ORIGINAL ARTICLE

Representationalism and cognitive culturalism: riders on elephants on turtles all the way down

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Abstract

This article examines the influx of neurocognitive concepts in cultural sociology and this development's consequences for representationalism. In the first part, I examine representationalism in two research programs that have shaped cultural sociology from the cultural turn to the present: Jeffrey Alexander's "strong program" and Ann Swidler's "tool kit" theory. I also briefly discuss the mixed and contradictory findings presented in one of sociology's most-cited cognitive works, Paul DiMaggio's (Annu Rev Sociol 23:263–87, 1997) programmatic statement on cognitive psychology's potential contributions to sociology, which catalyzed the discipline's cognitive turn. In part two, I demonstrate how in working with and against these three pillars in cultural sociology, figures such as Omar Lizardo, Steven Vaisey, and John Levi Martin have drawn on the cognitive neurosciences to re-conceptualize culture in ways that may have profound consequences for representationalism as it is practiced in the field. I conclude by arguing that representationalism is present but suppressed in cognitive cultural theory and its empirical investigations; that representationalism finds support in the neurocognitive sources that cognitive culturalists cite; and by asserting that future general theories of action will be predicated on a more interactive relationship between automatic and deliberative cognitive domains than the cognitive culturalists currently allow.

Keywords Representationalism · Cognition · Schemas · Dual process model · Habitus

Introduction

In this article, I examine the question, as cognitive and neuroscientific terms proliferate in cultural sociology, what are the consequences for approaches that privilege signification and representationalism? I define the latter terms broadly, as a range

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of approaches that attribute varying degrees of relative autonomy to symbol systems, and that attribute to these systems varying degrees of causal power. To examine this question, I discuss two programmatic cultural sociological approaches that have contributed significantly to shaping how representationalism is understood and practiced in cultural sociology from the cultural turn to the present. First, I present Jeffrey Alexander's "strong program" as representative case of representationalism. Second, I discuss Ann Swidler's influential pragmatic alternative to representationalism, which was predicated on demonstrating the limited degree to which symbolic representations shape social action, on the one hand, and reducing representationalism's claims to explanation, on the other. I offer a new reading of Swidler's empirical investigations, and draw to the fore how representationalism permeates her work while remaining relatively unacknowledged. To round out this section, I briefly reconstruct Paul DiMaggio's (1997) influential review article, Culture and Cognition. I illustrate how even though he concluded that cognitive theory and empirical findings strongly support the tool kit theory of culture in action, DiMaggio nonetheless presented multiple examples of how the cognitive sciences were simultaneously producing concepts and findings that substantiated representationalism's theoretical presuppositions.

Establishing a chronological dimension to my argument, in the article's second section, I investigate three figures who have incorporated cognitive neuroscientific terms and findings into their works in ways that critically engage with the programs described above. I examine the fate of representationalism in Omar Lizardo's (2004, 2007) cognitive neuroscientific reconceptualization of the habitus concept, in Steve Vaisey's (2009) dual process model of culture in action, and in John Martin's (2010) readings of cognitive neuroscientific developments, which he presents as demonstrating that representationalism is grounded on erroneous presuppositions.

I chose these articles because they have been influential in building cognitive culturalism into the energetic movement it is today. These articles have an enviable number of citations. Their authors' names frequently dot cognitive culturalist texts, and oftentimes appear together, cited side-by-side. It is suggestive of the development of an iconic status, as if the citations signify the promise of a consolidated paradigm with settled foundations (e.g. Patterson 2014). While cognitive culturalism is by no means a settled field, these particular figures and works have exercised considerable organizing power. Foundational statements may influence research programs long after the details of each particular argument have grown obscure. It is worthwhile to examine these articles in depth lest they become to some extent symbols of shared knowledge, totemic emblems of a paradigm's formative statements (Alexander 1987; Collins 1998). While I chose these because they have been influential, I also chose them for more specific purposes. The articles in the first case present examples of neurocognitive literatures shaping theory and concept development. The main article in the second case presents an example of empirical testing interpreted as justifying non-representational theory. Finally, the article in the third case marshals neurocognitive literature in effort to disprove the foundations of representationalist approaches to social action.

In selecting these three figures, I do not mean to suggest that a pattern of influence exists between them, or that they represent a unified core of consensus within

contemporary cognitive cultural work. The latter remains diverse, and disagreements over fundamental issues continue to animate it (see Brekhus and Ignatow [2019] for a comprehensive overview). In fact, emerging debates suggest its organizing theories and key concepts remain far from settled, much as they remain unsettled in the fields of cognitive psychology and the cognitive neurosciences from which these scholars draw. Cognitive culturalism is a vibrant program in the field. My intention is to encourage the reconsideration of the role representationalism (in all its varieties) will play in its development. The authors discussed here have identified tensions between the two. In the pages that follow, I examine these tensions as they are specified and developed in these particular cognitive cultural works. I identify ways that representationalism seems at first to yield only then to reappear in significant epistemological spaces, such as in theoretical logic, and in the research that is cited to build or sustain the arguments.[1]

In my analysis, I argue that representationalism lurks within these contemporary cognitive works, as well as within the sources they cite to build empirical tests and to buttress their arguments and conclusions. Also, more than linking representationalism with discursive consciousness, these works explicitly bracket signification and symbol systems from automatic cognition in terms of both processes of internalization as well as those shaping motives and action. I draw on cognitive theorists and scholars to argue, to the contrary, that during socialization automatic schemata are shaped by symbol systems, and that during internalization the dispositions encoded in automatic schemata come to bear these symbolic forms (D'Andrade 2002). Likewise, these cognitive culturalist works represent automatic and deliberative cognition as if they are entirely distinct, and as if interactions between these cognitive domains are so inefficient as to be extraordinarily rare. As a consequence, they represent action as the product of an excessively pure automatic cognition. I argue, rather, that interactions between automatic and deliberative cognition are more frequent and complex than presented in cognitive culturalism (Kennett and Fine 2009; Moore 2017; Shepherd 2011),[2] and that a general theory of social action should give significant attention and causal weight to these inter-domain relations and outputs.

Part I: Representationalism in the cultural turn, and the cognitive intervention

Jeffrey Alexander's strong program presents us with a theoretical framework that exemplifies the general presuppositions animating much of contemporary representational cultural sociology. Alexander has not engaged in a direct and sustained way

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[1] I do not exhaust the cognitive or neuroscientific works these authors reference. Instead, I focus on some of the central figures as they are presented in the articles, many of which—Bellah, D'Andrade, Gallesse, Lakoff, Miller, Piaget—have been influential beyond the domains and concerns presented here.

[2] See Brekhus and Ignatow (2019, pp. 12–13) for a brief discussion of recent efforts to revise and refine the dual-process model of cognition.

with cognitive neuroscientific theory.[3] On the other hand, Alexander's work and the strong program's version of representationalism have played the foil for cognitive culturalists in recent years (see Lizardo and Strand 2010; Martin 2010). Critics have argued that new developments in cognitive neuroscientific theory and conceptual modeling reveal fallacies in some of the strong program's and representationalism's foundational premises. I investigate these arguments below.

In this section, I outline pertinent themes within the strong program that cognitive culturalists have addressed. Given that Alexander's strong program offers both a well elaborated theoretical framework as well as a number of empirical investigations undertaken based on its premises, I discuss it here as a representative case of representational cultural sociology. To be clear, the strong program by no means exhausts the theoretical orientations, conceptual frameworks, or methodological strategies being used by cultural sociologists practicing some form of representationalism today. Nor do the cognitivist works I discuss below represent the entire range of cognitivism currently being practiced in cultural sociology, or the range of the work being developed by the particular authors I cite. I chose the following works because either they have been highly influential in the field or because their findings are of particular relevance and consequence for the themes explored herein.

The "strong program in cultural sociology" as representative case of representationalism

In his critique of Talcott Parsons, Clifford Geertz argued that the theorist tended to reduce cultural forms to being the product of strains between other systems, which prevented him from "ever seriously examining [cultural forms] as systems of interacting symbols, as patterns of interworking meanings" (1973a, p. 207). The works of both of these figures, Parsons and Geertz, informed Jeffrey Alexander's development of the "strong program in cultural sociology," as did those of their critics. In "Thick Description," Geertz (1973b) outlined a *structural* or semiotic theory of culture. In "Notes on the Balinese Cockfight," Geertz (1973c) argued that social action should be treated as a text and subjected to *hermeneutic* analysis. Alexander calls the strong program's principal method *structural hermeneutics*, a name that aptly signifies its influences. As we will soon see, however, Alexander would depart from Geertz in significant ways, and the theoretical and empirical work he created in the latter half of his career can accurately be described as post-Geertzian.

While Geertz played an important role during the strong program's formative period, it was also during this time that other theorists were turning to pragmatism and phenomenology to offer trenchant criticisms against determinisms of all kinds. Alexander recognized that excessive idealism and structuralism would create residual categories of local, interactional contexts, reduce actor subjectivity to cultural form, and fail to account for both rational and strategic actions, as well

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[3] See Alexander (2006, pp. 569–570, note 4) for an indication of how the author interprets the cognitive linguistics of George Lakoff in a manner that substantiates the culture-structural dimensions of Alexander's research program.

as habitual, typified practices that real social actors engage in as they navigate their ways through their daily lives. Building on insights of figures like Garfinkel and Goffman, Alexander (1988 [1987], pp. 311–316) developed a theory of social action that conceptualized actors as experiencing their environments through a combination of interpretation and strategization. He added that interpretation is itself a combination of typification and invention. To the extent that the research programs discussed here privilege one of these dimensions over the others, we will note the centrality of interpretation in representationalism, strategization in the tool kit theory, and typification in cognitive culturalism. What will become increasingly clear in the following is that while irreducible to one another, conceptually interpretation and typification share a number of significant themes. One of the central points of contention between representationalists and cognitive culturalists is the question of what forces predispose the mechanisms of typification to intuit particular patterns in experience (dispositions). We will return to this theme below.

In a programmatic statement outlining the strong program's version of representational cultural sociology, Alexander and Smith (1993) conceptualize culture in structural and narrative terms while simultaneously attributing to social actors dimensions of autonomy and capacities for acting in strategic, inventive, and even intuitive and habituated ways. This sentence outlines the theoretical ambitions:

> Bringing contingency and institutional effects back into our understanding of how culture works is a vital task. In achieving this micro-macro link, however, one must not overlook the reality of emergent properties, which demands that the integrity of different levels of analysis be maintained. Neither the importance of attitudes and actions, nor the significance of organization and environment, negates the existence at still another level of a cultural system (p. 154).

The authors conceptualize symbolic structures in these terms:

> [B]eneath narrative there lie structures of a more basic kind which organize concepts and objects into symbolic patterns and convert them into signs… Complex cultural logics of analogy and metaphor, feeding on differences, enable extended codes to be built up from simple binary structures… Because meaning is produced by the internal play of signifiers, the formal autonomy of culture from social structural determination is assured… [S]igns sets are organized into discourses. These discourses not only communicate information, structuring reality in a cognitive way, but also perform a forceful evaluative task (pp. 156–157).

While signification informs the cognitive apprehension of reality, the authors emphasize that actors and action have degrees of autonomy vis-à-vis these structures. Collective cultural forms do not exhaust subjective capacities, nor do they determine action in an absolute way. Perhaps anticipating the critiques presented by contemporary cognitive culturalists, Alexander and Smith explain that from "a semiotic perspective, cultural codes are elastic because there is only a

conventional, not a necessary, relation between signifier and referent" (p. 158). This means that no single, fixed meaning inheres in a collective representation or sign. Meanings become fixed to varying degrees through convention. Consequently, there is no presumption that social actors internalize perfectly a perfectly ordered and coherent and stable system of representation. Alexander and Smith continue, asserting that "cultural codes are elastic because individuals can ad-hoc from event to code and from code to event" (ibid.). Not only are meanings presented as variable, as existing in between fixed and unfixed states, but actors are conceptualized as orienting toward them in contingent ways.

The authors continue, explaining:

> There is no inconsistency, then, between speaking of cultural structures and of the contingency of action. Accountability and symbolic classification are different theoretical levels—emergent properties—of the same empirical process; they are concepts that explain the reciprocal interaction of structure and action. Culture, in our understanding, is one of the internal environments of action (158–159).

Given that theory requires abstraction and reduction, it is no surprise that when theorists characterize their theoretical opposition, they tend to abstract from their opposition's arguments and reduce them in advantageous ways. Critics of representationalism tend to gloss over some these details. As a result, actual representationalist works fail to demonstrate the features—excessive coherence and stability, perfect internalization—attributed to them by influential cognitive culturalist critics.

Tool kit theory and the displacement, suppression, and reinvigoration of representationalism

Ann Swidler (1986) developed her tool kit theory of culture in action as an explicit rejection of such approaches as the strong program's version of representationalism. She states that her tool kit theory of culture in action is intended to be a resource for "those interested in cultural *explanation,* (as opposed to 'thick description'") (p. 273, italics and parentheses in original), or that which Clifford Geertz argued the social scientist should strive to produce. This binary code in cultural sociology's epistemological foundation imposes on the field's practitioners a choice between relentlessly pursing cures for one's explanation envy or learning to live with one's interpretation anxiety. The promise of achieving explanation in a strict causal sense and of becoming a cumulative, predictive science (see DiMaggio 1997), runs through and also ahead of the cognitive culturalist texts analyzed below.

Culture, Swidler argues, "is more like a 'tool kit' or repertoire… from which actors select differing pieces for constructing lines of action" (1986, p. 277). Tool kit culture is comprised of styles, skills, and habits that people use routinely. These tools are more local, immediate, or tangible to actual social actors than are abstract symbol systems, and they greatly influence how actors navigate their everyday lives. From this formulation, Swidler draws two important conclusions: a) these tools and practices represent the essential, most causally powerful materials in what we call

culture, and b) sociologists of culture should train their attention on these tools and practices, and dispense with attending to broader cultural forms. She does not deny the existence of cultural structures, however: Strategies "of action incorporate, and thus depend on, habits, moods, sensibilities, and views of the world," she acknowledges, citing Geertz. "People do not build lines of action from scratch," she continues, but instead "construct chains of action beginning with at least some pre-fabricated links" (ibid.). Yet she denies these symbolic forms much causal relevance.

This kind of one-dimensional theorizing produces residual categories that weaken a theory's explanatory purchase. Swidler demonstrates that she is aware that by limiting cultural causes to strictly local, or micro-interactional manifestations, her theory is incapable of explaining what Geertz's work appears to explain so well. She wrestles with this tension in her subsequent work, *Talk of Love*. It is in an article written in collaboration with Iddo Tavory, however, that Swidler not only acknowledges that collective representations shape social interactions, but she and her coauthor fold signification into their theoretical conclusions, and in a powerful way (Tavory and Swidler 2009).

Swidler's (1986) argument is most powerful as a call for developing a conceptual lexicon for cultural forms along multiple axes, but foremost in terms of their degrees of being pervasive, broadly understood, and publicly available, on the one hand, to being personalized, experience-proximate, and even highly stylized and idiosyncratic, on the other: "Assumed here is a continuum from *ideology* to *tradition* to *common sense*" (p. 279; italics in original, but for our purposes the emphasis is on "continuum"). What remains unconvincing, however, is the postulate that a kind of barrier exists between collective and personalized forms, or any assertion that these forms are necessarily different not just in scale or degree but in kind. Difference in degree—i.e., a continuum—keeps open the question of the extent to which an individual's personal ideas and intuitions may be shaped by collective representations regardless of the actor's awareness of this symbolic association. If the aim is to produce a generalized theory of culture and action, then in this continuum formulation, it is neither logical nor tenable to argue that the local and interactional end of the continuum monopolizes causal significance while the other end, the one consisting of discourses, narratives, and collective representations, does not share the same capacity. Certainly, the contribution of each cultural dimension may vary across empirical investigations, but a generalized theory ought not foreclose the possibility of a cultural explanation that demonstrates connections between collective forms and individual expressions.

It is possible to interpret *Talk of Love* as Swidler (2001) doubling down on pragmatism in a defiant rejection of Geertzian structuralism. A more revealing and productive reading, however, comes from focusing not on her theoretical conclusions but on the summaries of her empirical analysis. In this reading, culture, as representations, is always shaping action in some capacity, during settled and unsettled times alike. For instance, in chapter six, Swidler states that this "chapter has shown how images of romantic love continually resurface even among people who consciously disavow them" (p. 128). Here Swidler describes mythic love as having the conceptual characteristics of a collective representation, one that is pervasive, durable, and powerful even for those who reject it with their utmost of intention. One could say

it a collective representation that her subjects have "internalized." Alongside mythic love exists "prosaic-realism," which is a second narrative of love that "is just as 'cultural' as the mythic view it claims to debunk" (p. 114), or, as one may be tempted to rephrase it, "just as 'mythic' as the cultural view it claims to debunk."

These binary repertoires (or we could call them narrative complexes) shape people's actions when they are making big, life-changing decisions, and when they are navigating their routine, everyday lives. Swidler observes that they interpret love in mythic terms when "thinking about the choice of whether to marry or stay married," on the one hand, and that they think about their intimate relations in prosaic-realism terms when "thinking about their ongoing relationships," on the other. As representationalism in contemporary cultural sociology does not insist that there is a stable overarching symbolic logic determining action, in this reading we can conclude that Swidler's findings are not a rejection of representational cultural sociology but a demonstration of its purchase.

In a subsequent work, coauthored with Iddo Tavory, Swidler turns to signification to demonstrate that semiotic cultural codes govern the meanings of intimate actions and relationships, and to show how these symbolic representations are encoded in material objects like the condom (2009). These meanings are not created in the interactional context. They are fixed through convention, widely understood, and powerfully constitutive. These meanings shape actions in the interactional context. The authors describe their theoretical conclusions thus:

> we show that culture constrains and shapes action not simply because all actors, institutions, and actions instantiate cultural codes. Rather, within situational contexts, individuals find actions to be semiotically charged a priori; these a priori meanings shape all future actions…

> Semiotic codes are powerful because they shape the ways we read the behavior of others (and, reciprocally, the ways we know others will read our own behavior) (p. 185).

As we move to discuss cognitive theory and its impact on cultural sociology, it is critical to recognize the importance of Swidler's receptiveness to the explanatory power of representationalism's tools. Tavory and Swidler conclude that cultural codes shape the shared understandings and personal dispositions that actors' draw on when they negotiate and engage in intimate interactions. To put it in cognitive culturalist terms, the authors are arguing that the shared cultural codes are operating within each actor's practical consciousness. To translate it one step further, the authors are arguing that cultural codes shape the automatic cognitive schemata embedded in the neural networks of individual brains within a vast network of social actors.

Cognitive psychology's contradictory signals to competing cultural sociology programs

Paul DiMaggio (1997) opens his review of cognitive psychology's potential for redirecting sociology with exuberance. Cognitive theory offers the promise of exodus, or

passage from a land of "[i]nterpretive studies that offer great insight but fail to build on one another," to one governed by epistemological certainties that will enable the sociological "study of lived culture [to become] a cumulative enterprise" (c.f. Lizardo 2014, p. 263). The map to the promise land: "clarify the cognitive presuppositions behind" your theories, concepts, and units of analysis (1997, p. 263).

DiMaggio presents us with some basic cognitive concepts that will be useful for navigating the remainder of this article. To the extent that order exists, DiMaggio says that it is produced within the active human brain (p. 267). Cognitive schemas perform this work. Schemas are "both representations of knowledge and information-processing mechanisms" (p. 269). They are attributed a central role in structuring action and order: "In schematic cognition we find the mechanisms by which culture shapes and biases thought." And they are the lynchpin of cognitive theory and its claims to explanation: "It may be useful to treat the schema as a basic unit of analysis for the study of culture" (p. 269). DiMaggio reports that cognitive psychology "directs the search for sources of stability and consistency in our beliefs and representations, first, to schematic organization, which makes some ideas or images more accessible than others; and, second, to cues embedded in the physical and social environment" (p. 267).

Just as schemata are attributed enormous epistemological power, so is the distinction between automatic and deliberative cognition. Automatic cognition refers to schemas shaping perception and recall in intuitive, unreflexive, and uncritical ways. Schemas privilege inputs that resemble their pre-existing substantive orientation (or disposition), both in terms of how they apprehend and attend to the external world, and in how they recall information and experience in one's memory. Automatic cognition is undisturbed by an input's or memory's truth-value. To the contrary, it will shape inputs to fit its pre-existing interpretive organization of the world. Likewise, it is capable of inventing memories that confirm its ordering predisposition. Deliberative cognition, by comparison, is effortful, challenging, and inefficient. Actors are described as shifting from automatic to deliberative cognition when they are provoked into self-awareness by the need to carefully consider information; when they are motivated to respond to undesirable conditions; or when their schematic predispositions prove strongly inconsistent with new information.

DiMaggio concludes from his review of the literature that cognitive psychology "strongly supports the tool kit… view and suggests that the tool kit is very large indeed" (p. 267). It soon becomes clear, however, that contradictions abound in DiMaggio's report, and in cognitive psychology more generally. For instance, as we have seen, tool kit theory casts theories that attend to supra-individual culture as missing the real sites of explanation. Yet DiMaggio reports that "[i]ncreasingly… psychological research bolsters and clarifies the view of culture as supra-individual, and even addresses supra-individual aspects of cognition directly" (266). Additionally, he describes how cognitive "psychological research can help us appreciate" that "relatively coherent cultural forms exist independently of persons in the broader environment," forms such as "diffuse myths, images, and idea systems," and other "relatively coherent representations [that] exist less formally as narratives or stories repeatedly invoked in public discourse" (pp. 272–273). In a final example, DiMaggio describes how cognitive research demonstrates that people do not acquire

culture "by imbibing it… through socialization" (p. 267). Yet just a few sentences later he notes that cognitive research "raises the possibility that socialization may be less experientially based, and more dependent upon media images and hearsay, than many" of sociology's extant theories suggest (p. 268).

To complicate things further, the cognitive cultural works discussed below draw on cognitive neuroscientific theory and research to substantiate conclusions that contradict many of those that DiMaggio drew from his review of the literature. For instance, Omar Lizardo (2004, 2007) draws on cognitive neuroscientific works to argue against the second finding on socialization. John Martin (2010) draws on works in cognitive neuroscience to argue against the thesis that "supra-individual culture" is either part of cognition or has an impact on action. And in direct contrast to DiMaggio's main conclusion, Steve Vaisey (2009) builds on the moral foundations theory, developed by social psychologist Jonathan Haidt (2001), and the works of cognitive anthropologist Roy D'Andrade (1995), to argue that the tool kit theory of action is in fact not supported by cognitive psychology at all. Below we will consider in greater depth how Vaisey's dual process model leans heavily on Haidt's moral foundations theory [however, we will not dive into the works of Kurt Gray and Jonathan Keeney (2015a, b), who claim that their cognitive research disconfirms Haidt's "MFT (moral foundations theory) on its own terms"].

While DiMaggio concludes that cognitive psychology lends support to the tool kit theory, some of the evidence he shares contradicts contemporary representationalism in appearance only. For instance, DiMaggio reports that supra-individual culture both exists and exercises force in social life while being at the same time in many ways "fragmented across groups and inconsistent across its manifestations" (p. 264). In fact, much contemporary cultural sociology is predicated on the understanding that representational culture is a combination of patterns and structures unequally distributed and varyingly constitutive across publics on the one hand, and a reservoir of symbolic noise, on the other (Mast 2019). Its cultural universe is ordered and messy, its rate of change variable. Representationalists' research practices involve identifying variably-coherent symbolic forms and demonstrating how they contribute to shaping collective processes. For instance, in more concrete terms, a representationalist might identify the resurrection and renewed constitutive power of dormant narratives of work and self-worth (Berezin 2019). Another representationalist might specify how religious codes morph to accommodate new social arrangements (Gorski 2019). When these representationalists demonstrate how these symbolic forms and processes contribute to determining an election's outcome and shaping a nation's trajectory, their research practices represent a kind of scientific success that is of greater explanatory value than the phrase "interpretive studies" connotes.

As we turn to the cognitive cultural works in the next section, I offer a reminder of the abstract nature of concepts, and present a question that permeates the remainder of the argument. The abstract characteristic of concepts combines with our claims to be representing empirical reality to produce a reifying effect on our interpretation and use of the concepts themselves. This holds true for the concepts neuron, schema, discourse, or collective representation, alike. A neuron is a cell in the central nervous system. A cognitive schema, on the other hand, is a concept created to represent a pattern of thought or behavior, which is akin to narrative being a

concept for representing patterns of representations. In the following works, schema becomes our central concept of interest. We witness the reification occurring when we examine the questions that we will be returning to, which include, what are the forces and influences that shape a schema's capacity to make substantive distinctions, or that shape its dispositional tendencies? To what extent do signification and symbolic representations influence the formation of schemas? DiMaggio arrives at a sort of multidimensional assessment of the evidence, concluding that culture "inheres not in the information, nor in the schemata, nor in the symbolic universe, *but in the interactions among them*" (p. 274; emphasis added).

Part II: Contemporary cognitive culturalism: representationalism and signification within

Omar Lizardo and the neurocognitive habitus

In his own writings and in collaboration with Michael Strand, Omar Lizardo has worked from within Bourdieu's theoretical framework to re-conceptualize the formation and operation of that system of structured, structuring dispositions, the habitus. The question I pursue in this section is what happens to signification and representationalism through Lizardo's efforts to conceptually reinforce habitus, first by strengthening its cognitive foundations, and second by infusing it with neuroscientific and cognitive linguistic theories.

Bourdieu was not subtle in his efforts to remove the late-Durkheimian and Levi-Straussian forms of representationalism from social theory's models of social action and order. He sought to exorcise Saussure's "arbitrary nature of the sign," or to displace signification, with its meanings rooted in convention, and its mental concepts determined by the internal play of signifiers, which ensure its relative autonomy from social determinants. In its place, Bourdieu introduced a variety of cognitive theory that conceptualized mental concepts as schemas as primarily shaped through the body's engagement with its material and social surroundings. Through these interactions, the cognitive system internalizes the structural order of the external world in "bodily schemas." Shaped by the actor's location in an arena of fields and variable distributions of capitals, the dispositions or interpretive proclivities embedded in an actor's bodily schemas establish coordination between one's mental activity, action, and the exigencies and expectations generated by external structures.

Conceptually the habitus represents the cognitive internalization of the external order. Meaning, while in a significantly reduced form, nonetheless continued to serve a theoretical purpose in Bourdieu's work. For instance, language would be interpreted as serving the prevailing arrangements of domination: "the constitutive power which is granted to ordinary language lies not in the language itself but in the group which authorizes it and invests it with authority" (1977, p. 18). Symbols would play a similar role: "symbolic power relations tend to reproduce and to reinforce the power relations which constitute the structure of the social space" (1990a, p. 135). These two quotations do not exhaust the fates of language and symbols in

Bourdieu's body of work, of course, but they do indicate a baseline against which to interpret the theoretical movement signification and symbolic representations undergo in the cognitive culturalist works discussed here.

Before turning to two of Lizardo's works on the theme, here I briefly outline habitus's journey into neurocognitive terms, and give an indication of this journey's consequences for representationalism. (A) Through the concept bodily schemas, practice is made the central component of cognitive development and activity, and the semiotic variety of symbolic representations is decentered theoretically from meaning and action. (B) Representations are then reintroduced to the theory as embodied metaphors. In this theory of representation, grammar and semantic content, which lend a sign system structure and enable it to constitute, are generated by a system of motor schemes and motor operations, which are activated through the body's direct experience with its material and social surroundings. Through this process, external structures become embedded in and made the constituent elements of bodily schemas. (C) Activated in kind whether the actor is observing or performing an action, mirror neurons ensure the transmission of the external structure's social code between persons with shared social relations and conditions. Put another way, during social interactions, mirror neurons facilitate the consistent distribution of a cognitive mapping that "socializes" actors in accordance with one's station in the social world's distribution of institutions, field logics, and capitals.

In terms of the consequences for representationalism, through the introduction of cognitive neuroscientific concepts, Lizardo alternately claims to have circumvented the challenges posed by issues of signification and interpretation, on the one hand, and to have simply moved representationalism further to the margins of theoretical and empirical significance, on the other. Here we turn directly to Lizardo's work on habitus in order to unpack first how he bolstered the concept's cognition-as-practice dimensions, and second, to examine how he infused habitus with neuroscientific and cognitive linguistic terms.

Though it is likely that he would not have anticipated the kinds of literatures through which Lizardo reconstructs habitus, in his turn to Piaget, Bourdieu had already taken the initial steps on this journey into cognitive psychology. Examining Lizardo's reconstruction of this development in Bourdieu's conceptualization of habitus will present a basic outline of how the concept is organized and indicate the kind of work it does. With this established, we can consider the implications of infusing it with cognitive neuroscientific theory, on the one hand, and the embodiment theory of metaphors developed by George Lakoff and Mark Johnson (1999), on the other.

Habitus is the intersection of two orders. One is external to the actor and consists of the structures and institutions, and fields and capital distributions that pattern the social. This order receives comparatively little attention in Lizardo and Lizardo and Strand's cognitive culturalism. The second is internal to the actor—what others would call subjectivity—and it is this order, and the processes by which it becomes ordered and gets transmitted, that Lizardo translates into neurocognitive terms. This internal order is structured as well, and in a way that resembles the structures outside. This resemblance contributes a sense of naturalness and dimensions of flow to the practical experience of everyday life. Lizardo quotes

Bourdieu, and in a parenthetical draws our attention to the concept's organization: It is "the coincidence of the object structures and internalized structures, [notice the reference to two types of structures] which produce the illusion of immediate understanding" (Bourdieu 1990b, p. 26; quoted in Lizardo 2004, p. 379).

In his reconstruction of habitus, Lizardo explains how, by introducing into theories of knowledge and mental concepts a robust dimension of practice, Piaget's work enabled Bourdieu to erode the theoretical significance of signification. Bourdieu drew on Piaget's developmental cognitive psychology to disrupt the prevailing models of how mental concepts relate to practice, which had privileged the former and emphasized their capacity to influence the latter. Piaget emphasized the interactive relationship between bodily experience and mental concepts. He introduced the concept bodily schemas to emphasize the notion that knowledge results less from passive reflection on one's surroundings than through experiencing one's body acting on and transforming reality.

The following quotation shows the theoretical steps taken to displace signification. Noteworthy is the fact that Lizardo offers an interpretation of Piaget's theory of cognitive development that privileges practice but does not entirely dispense with symbolic representations:

> [C]ognitive structures are of primary importance in Piaget's developmental theory. However … Piaget's primary emphasis was not on cognitive structures as static symbolic representations, but on bodily schemas… and the operations generated by way of these, through which the child is then able to transform those representational structures into recognizable plans of action in the world, and to acquire new cognitive structures from the feedback obtained from her practical doings in the world. In this sense, Piaget considered knowledge to be of a primarily operative nature, and of cognitive development as dictated by the interplay of different structural systems, some bodily-motor, and some symbolic representational (ibid., p. 384).

Cognitive schemas and the body become fused, literally, in the concept bodily schemas. Symbolic representations are decentered from spaces in theoretical logic dedicated to meaning and interpretation, foreshadowing theoretical maneuvers to come. In these spaces, practice and cognitive schemas find new pride of place. Bodies have boundaries, and limited ranges of motion and capacities for mobility. They are only capable of physically interacting with the material and social worlds accessible within these limitations (we must bracket for now how communication technologies have extended these boundaries). While in this theory mental concepts are derived through embodied interactions with one's environment, what ends up getting internalized nonetheless transcends one's immediate surroundings.

As mentioned, habitus is the intersection of two structures. Incorporating Piaget's work in this fashion represents the internal structure as embodied schemas cultivated through practice. If these specify form and process, then what kind of substantive content gets cultivated into the schemas? (We return to this question in the next section, when I discuss what shapes the elephant's dispositions.) Lizardo argues that Bourdieu "sociologizes the concept of internalized operations produced by reality." Bourdieu does this by

giving Piaget's skeleton of abstract reality the flesh of a sociological account of the differential distribution of socially structured realities with which different class fractions are faced. In this manner, he provides his conflict theory with cognitive microfoundations that sidestep the problematic of order from shared representations (pp. 387–388).

This adds, but does little to flesh out, the second dimension of habitus, the external structure. Combined with the internal structure of bodily schemas, the concept habitus becomes the site of "subjective harmony and objective coordination between the internal and the external" (p. 389).

In the above descriptions, symbolic representations had retained a dimension of causal capacity in the production of mental life. The theoretical fusion of external and internal structures represented here, however, in conjunction with Lizardo's version of a "practical" Piaget, opens the possibility of dispensing with representational structuralism altogether. Lizardo pursues the opportunity. He concludes that, "practical action arises out of the operation of motor and operational schemes stored in the socially produced cognitive [not Freud's psychodynamic] unconscious, the true repository of collective representations in the Durkheimian sense" (p. 389). What has been revealed through this theoretical translation of cognitive theory into habitus, Lizardo argues, is "the symbolic fallacy of interpreting cognitive structures in a purely representational manner" (p. 388). Given the tenor of this theoretical turn to practice, the adverb "purely" stands out as an interesting qualifier.

We have arrived at the cognitive habitus. Lizardo (2007) then turns to neuroscientific theory to address the question of socialization, or the transmission of habitus across the greater community of social actors, but with cognitive content substantively patterned with the matrix of external structures appropriate to the actor's place in the distribution of capitals and embeddedness in fields (that is, in terms of social space, the habitus must be both local and global). Lizardo also reintroduces representation through a theory of metaphor that conceptualizes signs and systems of signification as ultimately rooted in and derived from the body's experience in the material environment. Much as Piaget's developmental psychology presented a way of connecting cognition and practice, a theory of metaphors created by cognitive linguist, George Lakoff, and philosopher, Mark Johnson, offers a pathway for fusing meaning with embodied experience.

As we have seen, in this theory the cognitive habitus is not structured by and therefore does not attend to signification of the relatively autonomous variety. The habitus is a social phenomenon, however, that must be transmitted through interaction. This means that its contents must be communicated to others via some medium. Speech is not required, as the body itself, through unintentional movements or patterned gestures, may serve as the medium. Indeed, as Lizardo notes, "overt conduct," even from the point of view of the cognitive habitus, "is fraught with hidden 'conceptual content'" (p. 332). That is, the body in practice signifies. What remains, therefore, is the need for what amounts to a semiotic theory, or a theory of the production, communication, and interpretation of signs.

In a move that enables him to avoid resorting to semiotic or representationalist theories and methods, Lizardo turns to the work of Lakoff and Vittorio Gallese,

professor of physiology and cognitive neuroscience theorist, to argue that this content "is easily graspable by our neurocognitive system" (p. 333). Yet even this does not contradict the theoretical presuppositions of representationalism. This theoretical step translates the signification process into a different lexicon, but the basic process of a signifier being interpreted in some capacity by a receiver, remains the same. The neurocognitive system is still "grasping" and distinguishing between signs—a wink as opposed to an eye twitch (Geertz 1973b) that derive their meaning from their positions within a system of representations.

Lodging this capacity in the neurocognitive system appears to circumvent the subject or actor. What it does, rather, is describe the same phenomenon occurring but on a different empirical level and in a different lexicon. That the neurocognitive system is presented as the active agent does not detract from the overarching logic of internalization, or eliminate the need for a theory of signification: Through interactions with the social environment, the actor internalizes systems of representation (variably and incompletely). In cognitive terms, this process shapes the cognitive schemas lodged in the actor's neurocognitive system, lending them particular dispositions towards signs and their referents. In simpler terms, the process of transmission still contains a signifying component, and some of what gets encoded in cognitive schemas during the internalization process is dimensions of a relatively autonomous sign system.

Therefore, to truly circumvent the tenets of reprsesentationalism, what is needed is a theory of meaning that eliminates entirely any aspect of the arbitrary nature of the sign. What is needed is a theory that grounds meaning not in convention but on what Derrida (1967) called a transcendental signified, or a source that, by anchoring all meanings—in semiotic terms: fusing signifier and signified, and thereby arresting the deferral of meaning—enables the theorist to eliminate the issue of interpretation. While in places Lakoff and Johnson sidestep this issue, Gallese and Lakoff (2005) do not. As Lizardo puts it before quoting Gallese and Lakoff, the authors "put the matter in strong terms":

> We … argue that conceptual knowledge is embodied, that is, it is mapped within our sensory-motor system, [and] that the sensory-motor system not only provides structure to conceptual content, but also characterises [sic] the semantic content of concepts in terms of the way that we function with our bodies in the world (Gallese and Lakoff 2005, p. 456, quoted in Lizardo 2007, p. 333).

The sensory-motor system, in this formulation, is the transcendental signifier that arrests the contingency of meaning.

Mirror neurons are what enable this theoretical move. When macaque monkeys enter the text, we learn what mirror neurons are and what they do:

> [I]t was discovered that neuronal activation increased in certain areas (i.e. F5) of the ventral pre-motor cortex not only when the animal itself performed an action on the object or was visually presented with the object, but when it perceived another animal (or sometimes the experimenter) performing that action on the object (Lizardo 2007, p. 329).

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Gallese builds on the mirror neuron phenomenon, which he argues demonstrates that in human action "observation automatically triggers action simulation," to offer a theory of "embodied simulation." He continues, asserting that this "process of automatic simulation constitutes also a level of understanding, a level that does not entail the explicit use of any theory of symbolic representation" (Gallese 2003, p. 523, quoted in Lizardo 2007, pp. 333–334). He calls this a "motor ontology." Embracing motor ontology would vanquish the arbitrary nature of the sign from the model of social action. It would also problematize the transmission of habitus, however. The theorist would face the choice of arguing that the external *social* structures that are encoded into schemata via internalization are, in fact, essentially natural and biological in nature, and consequently that external structures are reflections of natural, biological imperatives. The other choice involves acknowledging that in order for external social structures to be internalized, a translation must take place in which they are rendered through and into a symbolic code, which is then passed through words, actions, and materiality, to and across social actors. This option, however, reintroduces the arbitrary nature of the sign, and likewise moves the model back into the realm of a social, not a motor ontology.

Our interest lies in how Lizardo incorporates this argument into his conceptualization of the cognitive habitus and into cultural sociology, more broadly. At this time, he interprets Gallese's formulation in strong terms: "Conceptual content is thus immanent to and irreducibly inseparable from—via the embodied simulation mechanism—the overt actions of other social agents" (p. 334). This flirts with shifting the research agenda from addressing processes and phenomena through the presuppositions of a social ontology to those that undergird a motor ontology.

Lizardo's interpretation of Gallese and Lakoff's work indicates that he may have been seeking to elide meaning and interpretation. Without embracing motor ontology, however, signification and the tenets of representationalism sneak back into the theory at the margins. Once this is acknowledged, the question becomes what proportion of habitus formation and transmission, and of social action more generally, will signification have to affect in order for strong cognitive practice theory to incorporate it theoretically, and attend to it in empirical investigations. One option is to treat it as an insignificant residual category, and when pressed, resort to the theoretical logic of the base superstructure model. Lizardo equivocates in the end. While he reiterates that Lakoff and Johnson's concept of embodied metaphors casts "the human body as the primary source domain for our tacit understandings and explicit representations of most everyday life social situations (and systematized bodies of knowledge)" (p. 346), he ultimately restores representationalism to the theoretical playing field:

> [M]ost recent neuroscientific evidence shows that the semantic/ practical distinction, at the level of the neural structures that subserve the cognitive representational capacities of the learning agent is not set in stone. In fact "pragmatic" and conceptual representations of the world of objects and persons interact in complex ways. In fact, the former sometimes "override" and enrich purely semantic understandings of the object-environment (p. 345).

Steve Vaisey, the dual process model of culture in action, and the representationalism within

In these two early articles, Lizardo drew on cognitive neuroscience to develop practice theory in a more strictly anti-representationalist way. Per Bourdieu, the habitus shapes social action, and Lizardo argues that cognitive neuroscientific theory and empirical findings demonstrate that through the internalization of external structures that are non-linguistic in nature, the habitus offers a model of the reproduction of social order occurring through nonconscious mechanisms. Habitus, in this sense, is similar to what Steve Vaisey will be calling practical consciousness (by way of Giddens) in the article under consideration here. In his dual process model of culture in action, Vaisey (2009) employs a similar theoretical logic, adds an empirical component, and concludes that his findings substantiate the habitus model of social action. To develop the dual process model, Vaisey turns to social psychologist Jonathan Haidt, cognitive anthropologist Roy D'Andrade, and Robert Bellah and colleagues work in *Habits of the Heart*.

Lizardo's extension of practice theory through cognitive neuroscience was impressively thorough in its attempts to corral and displace representationalism, even if it sneaks back into the theory at its margins. Vaisey, too, argues against representationalism, but in a more qualified way. While it ends up animating his empirical investigation and findings and in a central and consequential way, Vaisey nonetheless suppresses representationalist contributions to his study, and resists integrating them into his theoretical conclusions.

Vaisey's dual process model has been influential in legitimating the turn to cognitivist models of cultural action. The theory represents the main reservoir of motives and action as lodged in the automatic, non-deliberative domains of cognition. Cognitive schemata located in neural networks are shaped through experience, and then these "cultural-cognitive structures" act back on and shape an actor's motives and actions in a nonconscious way. Vaisey claims that the dual process model displaces the rational pragmatism that animates Swidler's approach because the tool kit theory conceives of action as the product of deliberative, not automatic, cognition. Vaisey's claims regarding his findings' implications for representationalism are more complex. In this section, I analyze representationalism in Vaisey's dual process model, and conclude that while it "hides in plain sight" in his article, Vaisey nonetheless fails to acknowledge its role or to pursue its significance in his theoretical conclusions.

Vaisey's argument is built atop four pillars. To argue that cultural action is not shaped by deliberation or rationality, referred to as "discursive consciousness," he employs the theoretical logic that social psychologist Jonathan Haidt (2001, 2005) used in assembling his "intuitionist" moral foundations theory. Vaisey's sets out to demonstrate that rational deliberation is "uninvolved in" (2009, p. 1690) cultural action (Proposition 1, discussed below). Haidt theorizes that bio/psychoevolutionary forces determine automatic cognition's dispositions. While Vaisey employs Haidt's theoretical logic and method, he imports a different model of cognition, one called "connectionist networks." This is the argument's second pillar. Vaisey gets the model from D'Andrade (1995), who describes it as a mind-as-computer model designed to

conceptualize the fundaments and dynamics of cognitive schemata. Vaisey argues that the connectionist networks model explains how cognitive schemata are embedded in neural networks in the brain and serve to shape action at the level of motives, predilections, and moral dispositions. Giddens and Bourdieu represent the third pillar. Vaisey argues that, interpreted through this cognitive conceptual framework, his empirical findings substantiate these theorists' models of social action, that of practical consciousness and habitus. This conclusion, which suppresses representationalism's readily apparent contributions to his empirical model and testing, suggests an affinity with Lizardo's early theoretical work on habitus, detailed above. Regarding representationalism, the fourth and final pillar in Vaisey's study is Robert Bellah et al. (1985), and the research team's empirical findings in *Habits of the Heart*. Bellah et al. play a vital methodological role in Vaisey's argument, and they deliver an unacknowledged but consequential twist to the plot.

In terms of my main point, which is that cognitive cultural work is suffused with unrecognized or suppressed representationalism, the Bellah et al. pillar is the main site of action in this section. In the following, I illustrate how, in turning to Giddens and Bourdieu, Vaisey brackets "meaning" theoretically, and replaces it with practical experience. I argue that this theoretical conclusion does not flow logically from his empirical model and findings. To the contrary, I demonstrate how, through incorporating Bellah et al.'s (1985) findings into his empirical measurement tool, Vaisey reintroduces signification to his study and in a central and consequential way, and thereby ends up substantiating a representationalist theory of culture in action.

First, however, I discuss Jonathan Haidt's (2001) work on moral intuitions. Intuition is a central concept in what Haidt calls "moral foundations theory," which raised the profile of the "dual process model of cognition" considerably, due in no small part to the social psychologist's ventures into the crossover nonfiction market and mainstream media platforms. Vaisey builds on this dual process model and adds a cognitive twist. Given the extent to which Haidt's theoretical logic animates Vaisey's argument (see Pugh 2013 for a similar observation), a close look at Haidt's presuppositions about the nature of social action and meaning are in order. (See Gray and Keeney 2015a, b, in which these cognitive psychologists argue that currently their research is "disconfirming moral foundations theory on its own terms.")

Haidt (2001) intervened in the literature on morality by arguing that its prevailing consensus was predicated on a model of deliberation and rational action that his research was proving untenable. Intuition and reasoning make up two important but contrasting kinds of cognition, he points out (ibid., p. 818). Morality is experienced as "moral intuitions," Haidt argues, wherein intuition is rooted in the uncritical and unreflexive arenas of automatic cognition, and not in those of deliberative cognition, where judgment and reasoning take place. This is the basis of moral foundations theory. Most cultural sociologists share at least one aspect of this theoretical orientation—in terms of presuppositions about action, the cultural sociological consensus conceives of morality in nonrational terms. Many will disagree with Haidt, however, regarding the wellsprings and contents of moral categories.

In a later work, Haidt (2005, 2012) introduces the metaphor of a rider on an elephant to illustrate his model. This rider on an animal metaphor has a long history. Vaisey (2009, p. 1683) employs it, and agreeing that it is a useful heuristic, I use it

in this article. Now, Haidt's cognitive version of the metaphor: A social actor experiences the relationship between her mental and active physical life as if she were a rider on an elephant. Social action feels like it consists of the rider reflecting on one's interests, desires, and moral boundaries, and then commanding the elephant to transport oneself through social situations accordingly. Haidt tells us that this is not how moral or deep-cultural action works. The rider represents deliberative cognition. She has weak cognitive capacities, ones that are limited to controlled, reflective, and "language-based reasoning" (2012, p. 54). The elephant, on the other hand, is where emotion and intuition are stored and processed. Haidt describes it as a reservoir of strong cognitive capacities and entrenched proclivities, ones that developed over millions of years in accordance with evolutionary biological imperatives. Thus, the elephant is both the engine and the true driver of this pair. "When human beings evolved the capacity for language and reasoning at some point in the last million years," Haidt explains, "the brain did not rewire itself to hand over the reins to a new and inexperienced charioteer. Rather, the rider (language-based reasoning) evolved because it did something useful for the elephant" (ibid., pp. 53–54; parenthetical in original). The elephant is the source of moral intuitions, and the content of moral categories derive from the elephant's needs and experiences.

One final note on moral foundations theory before turning to Vaisey's version: Haidt critiques the deliberationists on two grounds. First, they are misguided for assuming that morality and moral action arise from reason and deliberation. Their second mistake flows from the first. Since the deliberationists hold that moral experience is rooted in judgment, they look to actors' discursive justifications for morality's form (capacity) and content (dispositions). But since morality is guided not by the rider (who deliberates) but by the elephant, or the non-discursive, non-reasoning, intuitive part of the cognitive binary, the deliberationists' method of looking at how people talk about their moral choices is entirely wrong.

Vaisey puts Haidt's model to good use. Haidt took aim at the rational deliberationists in the morality literature. Noting similar assumptions in Swidler's formulation of culture in action, Vaisey applies Haidt's logic of argumentation to tool kit theory. Building on this logic, Vaisey (2009, p. 1680) argues that in eschewing Weberian, Parsonian, and Geertzian theories of meaning and action, and in emphasizing that culture consists of strategic use of tools and repertoires, Swidler thereby commits herself to associating cultural action (note how cultural action takes the place of moral experience[4]) with the deliberative cognitive processes of rational and reasoned reflection. Translated through Haidt's metaphor, the tool kit theory presumes that the rider is in control when in actuality the elephant is the pair's true wellspring of action. It is important to point out here that while Vaisey

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[4] While Haidt discusses morality broadly, he remains focused on decisions and actions that explicitly have a moral component, and for the most part he sticks to using terms such as "moral intuitions." Vaisey uses the terms moral-schemas and moral dispositions, but his study purports to speak to the broader concept of culture in action, as both the role Swidler's theory of cultural in action plays in his study, and the title of his article, suggest. In this article, I treat the main subject of Vaisey's study as the broader of these two domains, or as culture in action.

includes an elephant in his act, it is not of the same cognitivist breed as Haidt's. As mentioned, the latter's is a combination of bio/psychoevolutionary theory and embodied schemata, whereas Vaisey's is born of the mind-as-computer metaphor, represented by the concept connectionist networks. I discuss this in greater detail below.

In an "empirical illustration of the model," Vaisey outlines two propositions his research model is designed to examine.

> Proposition 1.—Because discursive consciousness is largely uninvolved in routine moral decision making, interview respondents will either (a) tend to explain their behavior in intuitive terms without a clear substantive referent or (b) offer multiple "loosely coupled" logics of justification to support their judgments

> Proposition 2.—Because the practical consciousness or habitus will tend (probabilistically) to generate a response that is consistent with its underlying schematic organization, respondents' *forced choice* of a cultural script will be predictive of their future morally relevant behavior, even when other factors are held constant (p. 1690; italics in original).

One thing to note is that many of the conclusions that Vaisey aims to draw about theory and cognitive concepts are already central components in this "empirical" illustration of the model.

Vaisey states that his "proposition 1" is designed to demonstrate that the rider, discursive consciousness, is uninvolved in moral decision making (p. 1690). He acknowledges this is difficult to demonstrate (p. 1690), but he draws on interview data to indicate that the respondents' answers were consistent with the proposition 1 (p. 1691). That is, the interviewees had a hard time explaining the moral logics of their decision making. For instance, in an interview a young woman equivocates over the morality of a terminally ill person using tobacco and cannabis, and she fails to "provide any compelling reasons" for asserting that ultimately such actions would be wrong (1695). Vaisey provides this as an example of discursive reasoning's absence in moral judgment. That the woman comes to a determination for which she cannot vocalize a rationale is suggestive of how practical consciousness controls moral reasoning. We will return to this example below. Our main interest, for now, lies in proposition 2.

If the findings from proposition 1 indicate that the rider is not guiding moral action but rather that the elephant is in control, then how does one go about unpacking the elephant and determining what is shaping its dispositions? Taking cue from Haidt (2005, 2012, p. 47), Vaisey proposes that interviews draw forth fragmented narratives that interviewees create in their discursive consciousness. These are post-hoc rationalizations created in moments of intentional reflection, which is a cognitive process that is "uninvolved" in moral or cultural action. Fixed response surveys, on the other hand, ones that force respondents to choose answers even if they do not feel strongly about the options, are better at ascertaining the workings of practical consciousness (automatic cognition), or the moral intuitions represented by the elephant, Vaisey argues.

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Here we need to focus in on how Vaisey uses Bellah et al.'s (1985) empirical findings, and pay particular attention to this research team's methods and the role language played in their study.

- Vaisey states that "interview methods engage with discursive consciousness alone" (p. 1687).
- He states that his proposition 1, "discursive consciousness is largely uninvolved in routine moral decision making" (p. 1690), has been demonstrated by existing research, citing Bellah et al.'s (1985) *Habits*.
- Bellah et al.'s principal research method in *Habits* was the active interview.
- Therefore, per Vaisey's definition of cognitive domains and the strict boundary separating their functions, Bellah et al. gained their findings by accessing deliberative cognition alone.

Vaisey's goal is to demonstrate that deliberative cognition is uninvolved in shaping cultural action. Nonetheless, he incorporates Bellah et al.'s findings, which were derived through accessing deliberative cognition, into his survey tool, which is supposed to be designed to access automatic cognition or practical consciousness.

As Bellah et al. (ibid., p. 304) explain in the *Habits* appendix:

"We conceived of our research from the beginning as a dialogue or conversation with fellow citizens…," and they add that "we sought to bring our preconceptions and questions into the conversation and to understand the answers we were receiving not only in terms of the language but also… in the lives of those we were talking with."

Bellah et al. describe their method in terms synonymous with deliberation: "The interview as we employed it was active, Socratic."

Regarding language, Bellah et al. explain that their findings about Americans' moral dispositions were derived through methodically privileging signification: "[W]hat we were interested in above all was the language people used to think about their lives and the traditions from which that language comes." The authors argue that language contributes significantly to the construction of reality: "We believe… that the mobile middle classes define reality for most of us in the United States." Bellah et al. conclude that their results demonstrate that language and reasoning are the strongest forces shaping moral dispositions: "We think our interviews have allowed us to describe the most influential forms of middle-class language and moral reasoning about private and public life in America today" (ibid., p. 306).

To sum up, Bellah et al. privilege signification and discursivity in their research design, and they emphasize their explanatory power in their results. Despite this, Vaisey not only argues that *Habits* substantiates his proposition 1—"discursive consciousness is largely uninvolved in routine moral decision making." He then uses Bellah et al.'s results to assemble the central measurement tool for testing his proposition 2:

To illustrate proposition 2, I use a single variable to measure the respondents' most accessible or salient moral schema… I rely on a question designed to

mirror the moral typology developed in *Habits of the Heart* (Bellah et al., p. 1985). This typology includes four overarching moral logics….

His single-item measurement tool is "not ideal… as a measure of moral schemas," he concedes. Nonetheless,

> As a single item, it is well matched to the four moral schemas outlined in *Habits of the Heart* and was *explicitly designed* to measure them" (p. 1691; emphasis added).

When Vaisey's forced choice survey returns multiple significant coefficients, suggesting that the tool is good at predicting moral behavior (pp. 1699–1702), Vaisey concludes that the measurement tool has captured "something significant about the respondents' internalized moral-cultural schemas" (p. 1703). Likely it has. The conceptual and theoretical conclusions Vaisey draws, however, do not flow logically from these results.

While Vaisey's (and Haidt's) research helps unsettle one-dimensional rational deliberationist explanations of cultural action, considerable interpretive work remains to be done in order for Vaisey to turn his survey results into evidence demonstrating that cultural action is most accurately depicted by theories of practical consciousness and habitus. Vaisey turns to D'Andrade for tools to build the argument. In the work Vaisey consults, D'Andrade (1995) gives a thorough overview of the roots, branches, and (at the time) contemporary developments in cognitive anthropology.

Vaisey finds that schema theory and "connectionist networks" (D'Andrade 1995, pp. 138–149) best fit his needs: "In this view, cultural-cognitive structures are built up out of experience and allow a person to respond to stimuli in ways that are automatically generated by the weighted connections between the elements of the inputs at hand" (p. 1686). To unpack this a bit, schemata are connected to one another, and they are located in neural networks in the nervous system. They are described as being shaped by interactions with forces and objects outside of the person. These interactions shape schemata in the sense of giving them interpretive preferences and dispositional proclivities. Once these are encoded in schemata, then when the social actor is navigating the world and encountering "stimuli," these schemata activate within the actor's brain and persuade it to interpret and interact with the environment in a manner consistent with the schemata's coded dispositions. This returns us to the question of what forces shape the proclivities of the elephant? If we know the answer to this question, then we have a theory of what causes social action. We know Haidt's answer.

Vasey's description suggests that it is local physicality and direct interactivity with objects and social relations that shape the elephant's preferences. As we saw above, in his early work, Lizardo argued that the local environment, both social and material, (and I here I switch to my preferred terms) is coded with signs signifying external social structures and relations. Lizardo moved representationalism, or culture as a patterned, relatively autonomous sign system, to theory's margins. Does Vaisey conclude similarly? Are the meaning patterns embedded in language and expressed through talk things that social actors experience in their everyday

lives (or in childhood development) and would thus be included in the category of experiences that shape schemata? Vaisey's answer is no: "schemas are nonlinguistic cognitive constructs," he asserts. With language and signification bracketed, Vaisey sums up the work this conceptual model performs in his theory. He argues that his empirical findings, embedded in the conceptual lexicon of cognitive connectionist networks, demonstrate that "'the elephant' provides a validated mechanism for understanding an important way society can 'get into' human beings that is homologous with Giddens's practical consciousness and Bourdieu's habitus" (p. 1684).

Let us briefly return to the example mentioned above regarding the young woman who struggled to explain why she felt it is immoral for a terminally ill person to use tobacco and cannabis. That question stems from the interview portion of Vaisey's study. Here we turn to the survey questionnaire. As established, Vaisey asserts that the questionnaire is better able to access the moral reasoning that takes place in automatic cognition or practical consciousness. Its dispositions are unperturbed by linguistic or representational signs. The survey (pp. 1708–1709) asks respondents questions about frequency of marijuana use and alcohol consumption ("not including at religious services"), cheating at schoolwork, skipping school, and other behaviors in this category of things. In order to arrive at his theoretical conclusions, the survey questions must represent something about morality, and they must access dispositions that reflect "nonlinguistic cognitive constructs." Therefore, Vaisey is arguing that the objects and actions specified in the questionnaire reflect the category of "moral," and he is asserting that these objects and actions bear no dimensions of representationalism, no aspects of signification. These survey questions, however, are mini-narratives replete with collective representations that are themselves embedded in moralizing discourses, to which the question's caveat, "not including at religious services," attests. The symbol "drug" itself is a coded boundary fixed by a variety of discourses. Medical, legal, social justice, pop cultural, religious; each discursive domain asserts a moral classification of "drug" substances, and specifies narratives representing how, when, why, etc. such substances may be used appropriately, or in their own sense of the term, "morally."[5] Much as Vaisey resists acknowledging the representationalism that Bellah et al. bring to his study, so too does he fail to address these additional dimensions of representationalism that pervade his survey questionnaire.

Furthermore, the survey evidence does not substantiate a connectionist network model of cognition. It cannot. Discussing it in detail is fine to the extent that Vaisey presents this part of his narrative as an act of theorizing. Additionally, because Vaisey's measurement of automatic cognition was based on a tool created through

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[5] Currently, this drug classification system is in flux. Tobacco, deeply constituted by narratives of health, class, and freedom [to versus freedom from], for instance, is becoming increasingly polluted. The scent of "marijuana" on an urban, suburban, or almost any other street in the USA, on the other hand, would no longer signify the "dirt," or social categories of peoples deemed dangerous or "matter out place," that it would have even a decade ago. The signifier "marijuana" itself is also being interpreted as polluted due to the role the sign played last century in the domination of racial and ethnic minorities, and is being replaced by the term "cannabis." To return to our main point: If we were to issue the same questionnaire today and interpret its results faithfully through Vaisey's theoretical representation of cognitive schemas, then to the extent that the questionnaire detects shifts in dispositions, we would be led to conclude that the changes were the product of an accumulation of experiences minus, or unperturbed by, any linguistic or representationalist elements.

thoroughly deliberative means, it is inaccurate to claim that his measurement device tapped into and assessed automatic but not discursive cognition. Even if this could be demonstrated (as if the tool could surgically distinguish between the two domains), it is more realistic to conclude that automatic and deliberative cognition have a more complex and interactive relationship than Vaisey's presentation of the cognitive model suggests ["interview methods engage with discursive consciousness alone" (p. 1687)].

Finally, the concept conveyed by "automatic cognition" plays an important role in the theories of action that animate contemporary representationalism. Signs and collective representations are internalized during cognitive development, however unevenly and variably, and thus shape the dispositions embedded in cognitive schemata. Nonetheless, here as elsewhere in cognitive cultural work, Geertz is cast to play the foil, and his work is caricatured as insisting that culture is "perfectly shared or perfectly internalized by all members of a given society" (p. 1686). Needless to say, Vaisey concludes that his findings do not support such a version of culture in action. Bellah and Geertz were both followers of Talcott Parsons, and both of them distinguished themselves from Parsons, and at around the same time, by advocating for conceptualizing culture in more autonomous terms (Bellah 1970; Geertz 1966). In fact, Vaisey does acknowledge that representationalist concepts contribute to shaping automatic schemata, but he does so only in a cursory way. For instance, he quotes D'Andrade, the same cognitive anthropologist from whom he borrowed the connectionist networks model of cognition, as asserting that the cultural "shaping of emotions gives certain cultural representations emotional *force*, in that individuals experience the truth and rightness of certain ideas as emotions *within* themselves" (Vaisey 2009, p. 1686, citing D'Andrade 1995, p. 229, emphasis in original).[6]

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[6] Vaisey is accurate when he asserts that D'Andrade, in his presentation of the connectionist networks model, emphasizes that experience is a constituent element of culture and downplays the role of signification. Yet it is also clear that D'Andrade emphasized experience because he believed that the state of theory in anthropology at the time was in danger of succumbing to "extreme idealism" (p. 149) and of embracing "*epistemological relativism*" (p. 148; italics in original), a development he believed would make "objectivity and science impossible" (p. 148).

To explain his concern, D'Andrade (1995, p. 148) shares a quote from Marshall Sahlins (who was quoting Leslie White) in which Sahlins advocated in too strong of terms for what D'Andrade interprets as an absolutist form of representationalism:

Thus [with symbols] man built a new world in which to live…. Between man and nature hung the veil of culture, and he could see nothing save through this medium … permeating everything was the essence of words.

The veil argument, D'Andrade explains, "comes from the idea that language and other symbol systems *determine* what we experience" (p. 148–149; emphasis in original). While he clearly chafes at what he interprets as epistemological over-determination, he nonetheless makes it explicit that rejecting the importance of language and signification altogether is not a tenable stance, either. Instead of simply dismissing representations, and in order to establish a causal hierarchy, D'Andrade performs a nifty theoretical maneuver that subsumes language to experience, arguing that

[in] the connectionist model 'words' do not 'encode' experience. Rather, words signify schemas, which means that the units activated by a particular speech sound also activate a larger pattern of connections which are the active schema for a particular experience. The sounds of words are like 'pointers' to patterns of experience—indices to internal mental structures, not 'veils' between reality and experience (p. 149).

Despite this, and despite what I have demonstrated above, namely that representationalism pervades his empirical analysis and findings, in his conclusions, Vaisey excludes signification and representationalism from his theory of dual process cultural action.

John L. Martin's interpretation of cognition's limits

The conclusions Vaisey (2009) drew from his dual process intervention were promptly taken up by cognitive culturalists and referenced as representing not theoretical interpretations but empirical facts. Anti-representationalism in these subsequent works remained a central animating ethos. Geertz, and those building on his semiotic and hermeneutic framework, such as Alexander and the strong program, remained the central foil.

John Martin (2010) mounted the most forceful attack on representationalism. Martin argues that discoveries in the cognitive neurosciences demonstrate that the theory of social action predicated on "culture as a web of signification" is untenable. Human cognition cannot internalize a complex system of representations. It does not have the capacity to store the system. And if it could, it could not draw upon it to inform everyday experience in a manner efficient enough to facilitate action. Given the "evidence pointing to our cognitive limitations," Martin (2010, p. 230) states, the theses 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" (p. 229).

If this were true, it would indeed be unwelcome news for representational cultural sociologists. Martin's is a misrepresentation of some of his most significant cognitive sources, however, and his thesis—that limited cognitive capacities mean social action cannot be shaped by signification—is contradicted by some of the very same sources he cites.

For instance, he turns to George Miller's (1994 [1955]) "justly famous piece" in which the early pioneer of cognitive psychology reviewed experiments that used tone, loudness, taste, and visual stimuli to examine the limits of short term memory information processing.[7] Results showed that people became confused when trying

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Footnote 6 (continued)

So, while he rejects the absolutist-representational assertion suggested by the veil metaphor, D'Andrade nonetheless maintains that symbols remain an important dimension in cognitive anthropology's future theories: "By changing the model of human cognition and meaning from a system containing *only* symbolic serial processing to a system containing both symbolic serial processing *and* connectionist parallel distributed processing, a number of things about human culture look different" (ibid., emphasis in original).

[7] Given the theoretical and methodological stakes of Martin's argument, cultural sociologists will be motivated to familiarize themselves with the kinds of methods and findings on which he is basing his assertions. Miller's argument is based on a meta-analysis of experiments in information processing. The following is a sample of some of the experiments Miller drew on to arrive at his conclusions.

Miller describes Irwin Pollack's (1952) uni-dimensional experiment this way: "Pollack… asked listeners to identify tones by assigning numerals to them. The tones were different with respect to frequency, and covered the range from 100 to 8000 cps in equal logarithmic steps. A tone was sounded and the listener responded by giving a numeral. After the listener had made his response, he was told the correct identification of the tone" (Miller 344).

to distinguish between and hold a certain number of bits of information in their minds, namely "the magic number seven, plus or minus two." Presented out of context, the number seems quite small. Read Miller's article through to the end, however, and it becomes clear that humans have developed methods (p. 348) and tools, like systems of representation (349–350), that enable them to store and use highly complex structures of information.

Miller breaks information processing into two categories, "absolute judgment" and "immediate memory," and he divides stimuli into "bits of information" and "chunks of information" (p. 349). While the processing of either is limited to around seven units, humans extend their cognitive capabilities far beyond those insinuated by Martin by combining bits into chunks, and by building ever more complex combinations of bits into assemblies of chunks. In Miller's words,

> Since the memory span is a fixed number of chunks, we can increase the number of bits of information that it contains simply by building larger and larger chunks, each chunk containing more information than before (p. 349).

This process is called *recoding*. Miller explains:

> The point is that recoding is an extremely powerful weapon for increasing the amount of information we can deal with. In one form or another we use recoding constantly in our daily behavior… [T]he most customary kind of recoding that we do all the time is to translate into a verbal code (p. 350).

> Our language is tremendously useful for repackaging material into a few chucks rich in information (p. 351).

Miller summarizes his argument thus:

> First, the span of absolute judgment and the span of immediate memory impose severe limitations on the amount of information that we are able to receive, process, and remember. By organizing the stimulus input simultaneously into several dimensions and successively into a sequence of chunks, we manage to break (or at least stretch) this informational bottleneck (p. 351).

Footnote 7 (continued)

Miller describes an auditory study done by Pollack and Picks (1954). "They managed to get six different acoustic variables that they could change: frequency, intensity, rate of interruption, on-time fraction, total duration, and spatial location. Each one of these six variables could assume any one of five different values, so altogether there were 5^6, or 15,625 different tones that they could present. The listeners made a separate rating for each one of these six dimensions. Under these conditions the transmitted information was 7.2 bits, which corresponds to about 150 different categories that could be absolutely identified without error. Now we are beginning to get up into the range that ordinary experience would lead us to expect" (Miller p. 347).

Miller describes Hayes's (1952) multi-dimensional stimuli experiment this way. Hayes tried out "five different kinds of test materials: binary digits, decimal digits, letters of the alphabet, letters plus decimal digits, and with 1000 monosyllabic words. The lists were read aloud at the rate of one item per second and the subjects had as much time as they needed to give their responses. A procedure described by [R. S.] Woodworth was used to score the responses" [Miller 1994 (1955), p. 349].

That is, we break the cognitive limitations that Martin presents as immutable. Miller continues,

> Second, the process of recoding is a very important one in human psychology and deserves much more explicit attention than it has received. In particular, *the kind of linguistic recoding that people do seems to me to be the very life-blood of the thought processes* (p. 351).

Martin (2010) cites Miller's justly famous piece as evidence that social action is not influenced, indeed cannot be influenced, by signification or systems of representation. Language is the quintessential form of signification. Miller concludes that linguistic recoding is the most important aspect of cognition.

Martin (2010, p. 231) then turns to psychologist Nelson Cowan (2000) to support his claim about cognition's limits. Forty-five years after Miller's publication, Cowan examined the latest evidence and revised the limit from seven down to four. This number is tremendously misleading if presented out of context, however.

Cowan's aim in this piece is to establish the boundary conditions necessary to accurately observe the limits on information processing capacity. That is, Cowan pursues the question of what rules must be followed in order for experiments on chunk processing to be valid. One condition that he specifies reiterates Miller's (1994 [1955]) conclusion about language's centrality to cognition. It also refutes Martin's (2010, p. 232) characterization of long-term memory. After presenting musings on long term memory's tendency to produce "networks of concepts and ideas," which oddly reads like a semiotic theory of memory encoding and recall, Martin argues that a "webbiness" aspect of culture cannot influence action because, due to the long term memory component of cognition, "we can't keep things unconnected" (ibid.).

Cowan states that, in addition to three other conditions, accurate readings of chunk processing capacities may occur when "steps are taken specifically to block the recoding of stimulus items into larger chunks" (p. 87). Cowan is stating that cognition seeks to recode stimuli into chunks, and that if cognition recognizes a familiar chunk in the measurement tool, it will automatically intuit a distinction and separate the chunk from the other signs in the presentation or flow of stimuli. That is, signification shapes cognitive schemata; the sign system makes cognition "see" distinctions.

Whereas Martin (2010, p. 232) argues that "a great deal of the problem we have with our parsimonious memory system seems to be in stopping the flow of associations," Cowan argues to the contrary that familiar signs force distinctions between stimuli and thus, because such signs move from memory to the foreground of awareness as if instantly, they corrupt the measurement of information processing. As Cowan (2000, pp. 89–90) puts it,

> It would be assumed that the number of chunks can be estimated only when inter-chunk associations are of no use in retrieval in the assigned task. To use a well-worn example inspired by Miller (1956), suppose one tries to recall the series of letters, "fbicbsibmirs." Letter triads within this sequence (FBI, CBS, IBM, and IRS) are well-known acronyms, and someone who notices that can

use the information to assist recall. For someone who does notice, there are pre-existing associations between letters in a triad that can be used to assist recall of the 12-letter sequence.

Cowan continues:

> If we further assume that there are no pre-existing associations between the acronyms, then the four of them have to occupy limited capacity storage separately to assist in recall. If that is the case, and if no other optional mnemonic strategies are involved, then successful recall of the 12-item sequence indicates that the pure capacity limit for the trial was at least four chunks. (In practice, *within the above example* there are likely to be associations between the acronyms. For example, FBI and IRS represent two U.S. government agencies, and CBS and IBM represent two large U.S. corporations. *Such associations could assist recall. For the most accurate pure capacity-based limit, materials would have to be selected so as to eliminate such special associations between chunks*) (p. 90; italics added).

Cowan is asserting, in effect, that systems of signification are deeply embedded in memory and intertwined with recall; in Miller's words, we can think of "memory as the handmaiden of discrimination" (p. 348). Miller's and Cowan's examinations show that signs combine to create increasingly complex chunks of information— we could call these complex chunks "codes," "icons," "collective representations," "narratives,"—and this kind of recoding occurs in human cognition as if automatically. Signification shapes the interpretation of stimuli by specifying distinctions and transmitting them into (variable degrees of) awareness as if through uninhibited reflection.

Martin interprets works such as Miller's and Cowan's otherwise. He concludes that they substantiate the assertion that "[c]ulture may be complex, but that means it is not in our heads" (p. 240). He combines this with a reference to Vaisey (2009) to offer the methodological conclusion that "the last thing we should do is to conduct in-depth interview with a selection of informants, any more than we would expect to strike gold by asking them for whatever change is in their pockets" (ibid.). In representationalism, symbol systems are modeled on language. Gallese describes language as "the cognitive tool of abstraction *par excellence*" (2003, p. 518). As we have seen, Miller argues for the centrality of language in cognition, and Cowan asserts that signification shapes cognition.

In one final example of how cognitive psychology's research findings can be interpreted in radically different ways, I turn to another reference in Martin's case against representationalism. Martin (p. 231) cites the work of Intraub et al. (1996) to further his argument that memory is incapable of internalizing a complex, structure-like system of collective representations. In this article, however, Intraub et al. demonstrate not only that human memory is composed of "abstract representations" but that cognitive processing depends on the "top-down" incorporation of such representations in order for it to connect partial views during visual scanning.

Citing three studies, the authors state that "there is growing evidence that an *abstract, nonsensory* spatial representation (a memory structure) plays a role in

the integration of eye fixations" (p. 120, emphasis added). The authors explain that "perceptual schema" create continuity during visual scanning (119). A perceptual schema "is a mental representation of the likely structure of the scene that is understood to 'exist' just beyond the edges" of a picture's boundaries. In wording that suggests cognition operates in ways very much like the hermeneutic circle, the scientists explain that such schema allow "the viewer to understand the partial view within a larger context." Visual apprehension of a picture, they continue, "reflects not only the actual bottom-up information that has been presented, but highly probable *top-down information from the schema*" (119, emphasis added). The authors conclude that their work speaks not just to issues of memory but to "the type of processes that take place during scene perception" (p. 132). Their work indicates that memory involves storing abstract representations, and that cognitive processing involves bringing forth these "abstract, nonsensory" representations to make sense of the "bottom-up information" that is visually present. In their words, "an abstract representation of the expected layout of a scene aids in comprehension and integration of… partial views, thus giving rise to the viewer's experience of a continuous visual world" (p. 132).

In sharp contrast to Martin's characterization, we conclude this section with a theory of how signification and systems of representation helped to give rise to human cognition. After he (1995) published his influential volume, *The Development of Cognitive Anthropology*, Roy D'Andrade (2002) radically resituated language in his theory of cognition and culture by arguing that, as a product of human evolution, cognitive schemas are inextricably intertwined with signs systems and practices of signification.

D'Andrade (2002) argues that culture is a "selective factor in human evolution," by which he means "that our bodies and our psyches have been affected by a past history of living a cultural way of life." He continues:

> Having a body and a certain kind of psyche, with certain inbuilt emotions, desires, and cognitive skills, has been selected for because we have been living in a cultural world—a cultural niche—for millions of years. In rather different sense of the term than is usually used, it can be said that humans are, via evolution, 'culturally constituted'" (p. 223).

D'Andrade explains that, just as the initial capacity to make and use a tool "selected for the specialized human 'precision grip' – the way one holds a screwdriver" (i.e., tools contributed to shaping the evolution of the human body), so too did language and symbol systems select for specialized humans with "precision grips" of representational capacities for constituting, signifying, and interpreting.

Grammatically and semantically complex language is a cognitively demanding and costly capacity to cultivate and participate in, he points out. Why then did humans and humans alone develop it? D'Andrade reasons that

> [A] cultural way of life increased the fitness of individuals who were more effective at producing and understanding representatives because hominid band life became organized in such a way that information outside the immediate world of the here and now came to have important value. According to this

argument, a strongly *cultural* way of life, involving learned age and sex roles with complex learned routines, performed at different times and in different places, *fragmented* [emphasis in original] the unitary here-and-now togetherness of the primate band, at the same time requiring ever more coordination by means of environmental and social information concerning things not present. In such a world, *displaced linguistic representations became the glue that held together the intersubjective world of the band* (p. 226, emphasis added in final sentence).

Language and symbol systems proved extraordinarily valuable, he argues. They allowed knowledge to be shared between persons, and across and over generations. As its value increased, so did the advantage of having a brain capable of processing and storing language's increasingly complex rules and contents.

It was not increases in brain size that enabled the emergence of the human capacity to create and store language, D'Andrade explains. Rather, it was language that made "possible an advantage in having brain structures large enough to store hundreds of thousands of items because it makes learning from other brains effective and efficient" (p. 227). Language was a causal factor in not only producing the comparatively large human brain (p. 227), it also "significantly increased specializations of cortical and subcortical areas" (p. 228). D'Andrade, we should note before moving to the next section, asserts that cognition is capable of storing an enormous amount of information.

Signs systems caused the development and elaboration of complex cognitive and embodied schemata in humans, D'Andrade argues. Their content, not just their form, shaped brain and body evolution. Signs and complex symbol systems (the "glue" of the intersubjective world), cognitive schemas, and bodies, are inextricably intertwined.

Conclusion

Summing up, D'Andrade argues that cognition and representationalism are deeply interconnected. Swidler's empirical findings, particularly in her more recent work, demonstrate a social world woven through with symbol systems and collective representations. Despite Lizardo's impressive corralling of representationalism in his early theoretical work, signification still sneaks in at the margins. Although he failed to acknowledge it, representationalism contributed mightily to Vaisey's efforts to introduce the dual process model of culture in action into sociology. His findings substantiate representationalism inasmuch as they refute it. Some of the sources upon which Martin builds his argument against representationalism dispute his conclusions in explicit terms. In fact, D'Andrade's argument above, about representational forms and signification processes contributing to the very production of contemporary humanities' neurocognitive infrastructure and processing capacities, offers the strongest counterargument. Representationalism runs through cognition and its sciences.

More than any others, Lizardo and his periodic coauthor Michael Strand have incorporated neurocognitive research in effort to translate representationalist concepts like belief into practice-theoretical terms like habit (Strand and Lizardo 2015;

see also Lizardo and Strand 2010). Through this impressive body of work, the authors have nonetheless acknowledged that representationalism remains a significant dimension of both theory and lived experience. "Our intention in developing the notion of practical belief is not to completely eliminate the representationalist understanding" of action, the authors note, but to sketch its limits and identify "substantive problems that it is not equipped to handle and new areas of research that it cannot address." The authors conclude that, in "this respect, the notion of practical belief supplements representationalism, it doesn't 'eliminate' it" (Strand and Lizardo 2017, p. 187). Consistent with Strand and Lizardo's conclusion, I am advocating similarly, even as I am arguing that representationalism should play a more robust role in general theories of action.

My analysis also suggests the need to reexamine how we conceptualize relations between automatic and deliberative cognitive processes, and consequently how we conceptualize action as the product of interactions between these domains. Jeanette Kennett and Cordelia Fine's (2009) analysis of the cognitive literature suggests as much. Kennett and Fine argue that "the empirical literature indicates a complex interplay between automatic and deliberative mental processes in moral judgment formation, with the latter [the rider in the "rider on an elephant" metaphor] constraining the expression and influence of moral intuitions" (p. 77).

Cognitive culturalist interventions are helpful in prompting representationalists to revisit questions of socialization and internalization. Figures like Lev Vygotsky and Jacques Lacan are resources. Cognitive culturalism should also spark representationalists to take steps to better specify culture's diversity of forms, and to examine how these forms produce variability in actions within and across segments of a shared cultural community. Representationalists need not immediately resist neurocognitive interventions. As presented here, avenues exist for integrating such theories, concepts, and findings in ways that substantiate the presuppositions that buttress representationalism and signification.

Finally, it is worth reiterating that cultural sociology's varieties of representationalism have distanced themselves from the characteristics and practices cognitive culturalists tend to attribute to them. The varieties of post-structuralism that grew out of the linguistic turn do not posit that all persons interpret objects, actions, and ideas in the "exact" same way, of course. Since at least the reception of Jacques Derrida's critique of Levi-Strauss's structuralism, cultural sociologists have been orienting toward their research sites by looking for emergent or durable symbolic forms in a fragmented arena of cultural signs and social conflict. Even Geertz himself abandoned the web metaphor.[8] In a discussion on the "overarching points about cultural coherence and incoherence, [and] whether everybody has everything," Geertz, as quoted by anthropologist Richard Shweder (2007, p. 199), explains:

> As I've said before, the elements of a culture are not like a pile of sand and not like a spider's web. It's more like an octopus, a rather badly integrated crea-

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[8] See Smith (2005, pp. 44–45), for a discussion of the steps representationalist cultural sociology should take in order to move beyond Geertz's "webs of significance" metaphor.

ture—what passes for a brain keeps it together, more or less, in one ungainly whole. But we must, as anthropologists, search for as much coherency as we can find, try to find connections, and where we can't find them simply say that we can't find them.

Post-Geertzian cultural sociology does continue to assert that meaning forms through convention over time, that this sets in motion the perpetuation of a relatively arbitrary symbol system, and that this system mediates how people interpret and understand their worlds. Searching for patterns or cultural structures does not mean that one presumes that the universe of symbolic forms is 'coherent' and stable, however. To the contrary, this research is predicated on investigating a symbolic arena that is characterized by flux, ambiguity, and amorphousness, inasmuch as it is defined by structures.

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