Culture Beneath Discourse: A Conceptual Model for Analyzing Nondeclarative Cultural Knowledge

Published in *American Journal of Cultural Sociology*

Michael Rotolo*
University of Notre Dame

Abstract

Sociology has increasingly drawn on concepts from the cognitive sciences to better theorize and measure culture, particularly nondeclarative personal culture beneath the level of conscious awareness. Despite several advances, these “cognitive cultural” concepts are drawn on selectively, and limited work has attempted to assemble them into a coherent framework, leading to conceptual murkiness and ambiguous use of terms like “schema.” This article synthesizes literature on culture and cognition to develop a conceptual model of four interrelated but distinct types of cultural knowledge beneath the level of explicit discourse. Drawing on emergence theories, the author theorizes how these types relate to each other, as well as to discourse and public culture. The utility of the model is then illustrated using the empirical case of American religious understandings. These types of cultural knowledge have distinct qualities and, consequently, distinct roles in influencing thought, speech, and action. Assembling them into a coherent framework can improve scholarly accounts of how culture influences important substantive outcomes, how culture and cognition interact, as well as methods for studying nondeclarative cultural knowledge.

Keywords: Cognition, Culture, Qualitative Methods, Schemata, Theory

* Department of Sociology
4060 Jenkins Nanovic Hall
Notre Dame, IN 46556
Email: mrotolo1@nd.edu

In 1997, DiMaggio published “Culture and Cognition,” imploring sociologists to consider the role of cognition in structuring people’s cultural understandings. Since then, “culture and cognition” has emerged as its own academic subfield, increasingly becoming an area of theoretical and empirical interest for sociologists. This “cognitive turn” has been constructive, as “sociologists who write about the ways that culture enters into everyday life necessarily make assumptions about cognitive processes” (DiMaggio 1997, p. 266). However, sociologists have largely ignored DiMaggio’s assertion in the same article that “perhaps the highest priority for students of culture and cognition” is to understand how diverse cognitive structures (what he collectively calls “schemata”) “aggregate to more complex cultural structures or ‘logics’” (DiMaggio 1997, p. 278). Little work has theorized the unique properties of diverse schemata or their relationships, especially within individuals’ understandings, which this paper addresses.

In particular, sociologists’ loose and selective reliance on terms from the cognitive sciences lacks consistency and precision. Terms like “schema,” “logic,” and “model” can represent nearly any pattern or implicit association the researcher finds interesting. Often, these terms are used interchangeably (Shore 1998, p. 53). While having these concepts has been useful for identifying cultural patterns beyond what is obvious and literal in discourse, their ambiguous use poses problems, both theoretically and methodologically.

This paper seeks to remedy some of the current murkiness by outlining a conceptual model of four interrelated but distinct types of cultural knowledge beneath the level of explicit discourse: embodied knowledge, image schemas, conceptual metaphors, and cultural models. This is a further specification of what Lizardo (2017, p. 2) calls “nondeclarative personal culture,” or culture that is “phenomenologically opaque and not open to linguistic articulation.” This type of culture is contrasted with “declarative personal cultural,” or culture that

“phenomenologically transparent and elicited as linguistic reports” (Lizardo 2017, p. 2). Both of these *types of culture* are also related to but distinct from “practical” (Type 1, unconscious) and “discursive” (Type 2, conscious) *types of cognition* (Evans 2008; Vaisey 2009; Vaisey and Frye 2019). Drawing on theories of emergence, I theorize how these types of nondeclarative cultural knowledge relate to each other, as well as to discourse and public culture.

All of these cognitive cultural concepts have been analyzed by sociologists to varying degrees. However, their distinct qualities and relationships are unclear, leading to ambiguous use and muddled claims about how they work. Additionally, DiMaggio (1997, p. 273) emphasizes that they are not all cultural to the same degree: “some schemata reflect universal cognitive processes (for example, basic object categorization), whereas others may be quite idiosyncratic.” The proposed model intends to facilitate greater clarity and transparency when analyzing nondeclarative culture and making claims about “how culture works.”

After outlining these types of cultural knowledge and their relationships, I illustrate how they function together empirically by analyzing American adults’ religious understandings in interviews from the Intergenerational Religious Transmission Project (IRTP). These types of cultural knowledge have distinct qualities and, consequently, distinct roles in influencing thought, speech, and action. Assembling them into a coherent framework can improve scholarly accounts of how culture influences important substantive outcomes, how culture and cognition interact, as well as methods for studying nondeclarative cultural knowledge.

THE COGNITIVE TURN IN CULTURAL ANALYSES

In the past two decades, literature on how the cognitive sciences can aid cultural analyses has grown exponentially (e.g. Cerulo 2002, 2010; DiMaggio 1997; Kaidesoja et al. 2019; Lizardo et al. 2020; Zerubavel 1997). This “cognitive turn” has fostered improved

conceptualizations of different types of culture (Lizardo 2017; Patterson 2014), consideration of the body's role in cultural knowledge (Ignatow 2007), attention to automatic cognitions outside of conscious awareness (Vaisey 2009), and new discussions about appropriate methods for studying culture (Cerulo 2014; Jerolmack and Khan 2014; Martin 2010; Pugh 2013; Summers-Effler et al. 2015; Swidler 1986, 2001; Vaisey 2009, 2014).

A shared premise of the so-called “cognitive culturalists” (Pugh 2013) is that understanding cultural knowledge and the discourse and actions it leads to requires understanding the *cognitive bases* of cultural knowledge. Making claims about culture's coherence, consistency, composition, location, role in motivation, or other ways “culture works” inevitably involves assumptions about human cognition, whether stated explicitly or assumed implicitly (Bloch 2012; DiMaggio 1997; Foster 2018; Kaidesoja et al. 2019; Lizardo et al. 2020; Smith et al. 2020; Strauss and Quinn 1997). Thus, “we are better off if we make such models explicit than if we smuggle them in through the back door” (DiMaggio 1997, p. 282). Likewise, we are better off building on established theories about human cognition, rather than theorizing them from scratch or assuming them based on findings from our specific cases (Lizardo et al. 2020; Rotolo 2020).

To explain how nondeclarative cultural knowledge influences conscious deliberations and other outcomes, sociologists have primarily drawn on the concept of *schemas*. This makes sense, as DiMaggio (1997) used the term “schemata” to refer to structures that organize information in the brain. Schemas play a key role in prominent sociological theories, such as Sewell's (1992) theory of structuration. “Schema” can also function as a general concept, like “frame,” referring to an implicit pattern of understanding (Wood et al. 2018).

Though “schema” has functioned well for scholars seeking to highlight patterns of implicit understanding, generic use of the term has led to the conflation of several distinct concepts, and nearly anything “beneath the surface” of discourse can be effectively labelled “schema.” It is not uncommon to see “cultural schemas” (Edgell and Hull 2017), “moral schemas” (Farrell 2011), “cognitive schemas” (Ignatow 2009b), and sometimes all three terms used together (Ecklund et al. 2017). “Schema” can be singular or plural (McDonnell et al. 2017). Schemas may refer to conceptual metaphors (e.g. “law as a system”), relations between concepts (e.g. “law and religion conflict”), or value judgments (e.g. “religion as irrelevant”) (Edgell and Hull 2017, p. 305). Though schemas are a part of nondeclarative *personal* culture (Wood et al. 2019), studies theorize group schemas, based on analyses of *interpersonal* patterns (Hunzaker and Valentino 2019). Still, others describe schemas as “objective in the sense of being shared, publicly available understandings” (Blair-Loy 2001, p. 689) or forms of public culture strategically used to influence others (de Laat and Baumann 2016).

The problem is that terms like “schema” are currently used to refer to a variety of distinct concepts that are not rooted in any coherent framework. At best, this leads to limited and sometimes misguided models of how cognition influences culture. It also hinders discussion between researchers and the ability to build on others’ work in a consistent and organized way.

The following sections unify well-established concepts from the cognitive sciences with emergence theories to develop a coherent conceptual model of nondeclarative cultural knowledge that can facilitate greater clarity, transparency, and organization in sociological studies of culture and cognition. It is important to acknowledge that the current project cannot demonstrate that the theorized model is actually ontologically valid, hence my description of it as a conceptual model. However, benefitting from insights in the cognitive sciences necessitates

greater specification with consideration to the ontology of cultural knowledge, or notions about what cultural knowledge is composed of and how its parts relate (Lizardo et al. 2020). Whether stated or assumed, these notions factor into studies of culture and need further development.

A CONCEPTUAL MODEL OF CULTURE BENEATH DISCOURSE

Before outlining each type of cultural knowledge, I draw on emergence theories to specify how they are related. Emergence theories are useful for thinking about “how diverse cognitive structures...aggregate to more complex cultural structures or ‘logics’” (DiMaggio 1997, p. 278) because they directly concern the properties and relations of entities presumed to be at different levels of complexity. I argue above that this sort of theorization is currently lacking in studies of nondeclarative culture, with different entities being lumped together with generic use of terms like “schema.”

Emergence theories date back to John Stuart Mill’s (1851 [1843]) distinction between “homeopathic” and “heteropathic” effects and Lewes’ (1875) later distinction between “resultant” and “emergent” properties. The former terms describe aggregate phenomena, in which a whole is simply the sum of its parts. The latter terms (representing emergence) describe phenomena with novel properties, in which a whole cannot be reduced to the sum of its parts. The history of emergence theories involves numerous philosophical, logical, and metaphysical debates that are beyond the scope of this paper (see Francescotti 2007; Greve 2012; Humphreys 1996; Kim 1999; Sawyer 2001, 2012). Thus, the following focuses on the concepts necessary to succinctly explain how emergent relations work between the types of culture in this model.

By “emergence,” I refer to “whenever certain elements combine and thereby produce, by the fact of their combination, new phenomena, [and] it is plain that these new phenomena reside not in the original elements but in the totality formed by their union” (Durkheim 1964 [1894] , p.

xlvi). These new, emergent phenomena with distinct properties can be said to exist at a higher level than their component parts. Thus, by “levels,” I refer to higher-order and lower-order relationships of entities characterized by emergent relations. Emergence plays a role in several sociological theories that emphasize collective social phenomena as irreducible to the lower level of individuals’ actions (e.g. Archer 1995; Blau 1981; Coleman 1990; Durkheim 1964 [1894]; Parsons 1949 [1937]). For example, Durkheim (1964 [1894], p. 103) insisted, “Society is not a mere sum of individuals.” Similarly, emergence plays an important role in this model by explaining how complex higher-level types of cultural knowledge can emerge from more basic lower-level types of cultural knowledge while not being reducible to them.

Figure 1 shows the four levels of nondeclarative cultural knowledge in this model, including their relations to each other, discourse, and public culture. Before describing each, their emergent relations must be explained in greater depth.

Figure 1: Emergent Levels of Culture and their Higher-Level Relations

First, *relationality* is a crucial principle of this emergence model, which stresses that certain relations of lower-level entities must exist for higher-level entities to have causal influence (Francescotti 2007; Humphreys 1996; Kim 1999; Teller 1986). Atoms compose molecules, but not randomly. Certain stable, organized relations of atoms constitute the structure of a molecule. Likewise, higher-level cultural types may only exert causal influence because of certain configurations of lower-level cultural knowledge. For example, Lakoff (1987, p. 276-277) discusses how comprehending the meaning of *discourse*, such as “the crime rates keep *rising*” or “the stock has *fallen* again,” requires the more basic *conceptual metaphorical* understanding of “more-is-up, less-is-down.” We acquire this metaphorical understanding from the even lower level of *embodied knowledge* of verticality and quantity, which can be learned through experiences like seeing the level of liquid rise as it is poured into a glass, hence “more-is-up.” Certain lower-level knowledge structures must be in place for higher-level cultural logics to make sense.

Relatedly, these types of cultural knowledge are characterized by *synchronic emergence*, rather than temporal emergence (Humphreys 2008; Stephan 1999). That is, this model represents emergent relations at a particular moment in time, rather than over time. The goal is to emphasize their levels of dependency, rather than describe a sequence of development. Though higher-level entities depend on some lower-level entities for their existence, they do not always sequentially emerge from them. For example, all of the higher-level types of cultural knowledge in some way depend on embodied knowledge—the source of our most basic concepts, such as spatial relations (Lakoff and Johnson 1999). However, not all higher-level types of cultural knowledge sequentially emerge from embodied knowledge. A person could learn a new conceptual metaphor by hearing it used by another person. Certain types of lower-level

knowledge would have to exist for that conceptual metaphor to resonate. However, a person's acquisition of it does not have to sequentially emerge from lower-level cultural knowledge.

This principle also relates to the principle of *downward causation*, which refers to the ability of a higher-level entity to exert a causal impact on its own parts (Durkheim 1964 [1894]; Francescotti 2007; Sawyer 2012; Sperry 1991). Though higher-level entities depend on certain configurations of lower-level entities, their emergent causal powers can downwardly influence those lower-level entities (Polanyi 1958). For example, a person could acquire the implicit, lower-level conceptual metaphor “argument is war” (Lakoff and Johnson 1980, p. 4) through regular exposure to public discourse about “battling” ideas, “competing” ideologies, and “fighting” speakers. Without the concept of downward causation from higher-level entities, including externalized forms of public culture, creativity and novelty in cultural understandings would be highly constrained.

Finally, the principle of *multiple determination* helps explain how several levels of different entities can simultaneously influence substantive outcomes (Bhaskar 1975; Elder-Vass 2010). Multiple determination refers to the fact that “actual events are the outcome of interactions between a variety of causal powers” (Elder-Vass 2010, p. 7-8). In the case of this model, that means cultural understandings at the level of discourse result from a combination of causal influences at lower levels of cultural knowledge, as well as the influence of public culture and other features of the external environment. Multiple determination also clarifies how lower-level entities can have causal influence on higher-level entities independent of the entities between them. In particular, while cultural models of *abstract* concepts are inherently metaphorical (Lakoff and Johnson 1999), cultural models of more *concrete* concepts often involve elements of embodied knowledge that do not need mediation via image schemas or

conceptual metaphors (e.g. Embodied experiential knowledge of coldness and darkness may be an important part of a person's cultural model of winter and does not require conceptual metaphorical mediation). Different levels of entities represent different levels of emergent complexity, but not necessarily sequential development, aggregation, or dependence.

As mentioned, the history of emergence theories involves numerous other concepts and debates. For example, many theories differ in their notions of whether emergence is *strong* or *weak*, which concerns whether properties of higher-level entities—even if distinct—can be reduced to lower-level properties (weak emergence) or not (strong emergence) (e.g. Bedau 1997). Similar to Sawyer (2001, 2012), I take the position that debates like these remain empirical questions, particularly as they relate to social life. Many theories of emergence are focused on explaining biological, physical, and chemical phenomena, which are sometimes reducible to lower-level properties. However, social life seems to present numerous examples of collective phenomena that are not reducible to individual properties. For example, Sawyer (2003) finds evidence for both downward causation and the irreducibility of group properties to individual properties in an empirical analysis of improv, demonstrating how an emergent improv scene and frame uniquely enables and constrains the viable actions individual actors can take within it.

Having laid out this basic model of emergent relations between different levels of cultural knowledge, the following sections further describe each of the levels—embodied knowledge, image schemas, conceptual metaphors, and cultural models.

Embodied Knowledge

For decades, the cognitive sciences have challenged the mind/body division and argued that even our most complex and abstract reasoning comes from our embodied knowledge,

including spatiotemporal perception, sensory input, bodily regulation, emotions, and other types of habitual knowledge (Damasio 1994; Lakoff and Johnson 1999). The most basic level of cultural knowledge is embodied knowledge, which influences all the other forms of cultural knowledge we might study, even if only indirectly.

In sociology, embodied knowledge is often studied in the form of bodily practices and the unmediated dispositions associated with them, particularly practices centered around a cultural field of interest (e.g. boxing—Wacquant 2004). However, our embodied knowledge comes from all of our waking (and non-waking) moments. In breathing, perceiving, using capacities for memory, and moving, the brain is actively processing, which gives us a repertoire for more complex conceptual knowledge.

Embodied knowledge is often a difficult form of culture to access by researchers, due to both methodological and observational limitations (as in the empirical section of this paper). It is also sometimes so near-universal as to not be a significant part of cultural explanation. However, even basic embodied knowledge that most humans share, like the ability to distinguish up from down, is useful for understanding how complex cultural knowledge is constructed, and sometimes it can involve significant patterns of cultural variation.

Several recent studies demonstrate the importance of embodied knowledge for meaning-making, as well as how it can be culturally patterned. Pagis (2010) shows how the embodied practice of vipassana meditation helps practitioners acquire knowledge about abstract Buddhist religion tenets, such as *dukkha* (dissatisfaction) and *anicca* (impermanence). Embodied “know how” knowledge acquired through bodily practice enables familiarity with more abstract “know that” knowledge. As Pagis shows, this type of knowledge tends to become salient through habit, and it cannot be reduced to or explained by a different level of cognition.

As an illustration of this dynamic, Pagis draws on Dreyfus and Dreyfus' (1999) discussion of the knowledge involved in learning to play tennis. Learning how to properly swing a tennis racquet cannot be explained through some other level of knowledge, and the specifics of it cannot be fully articulated (though declarative instruction can help, which is an example of downward causation). The knowledge is acquired through practice, muscle-memory, and the body's tweaking of the practice over time. It is an embodied gestalt developed through habit. Thus, cultural practices, such as tennis or vipassana meditation, enable cultural knowledge that would not exist otherwise, and the embodied knowledge that results often plays an important role in meaning-making.

Winchester (2016) also illustrates this dynamic in examining how the embodied practice of religious fasting enables practitioners to understand abstract religious discourses regarding the soul, sin, and the acquisition of virtue. Before fasting, many of his respondents expressed confusion or annoyance with prescribed religious fasts. However, "through fasting, converts came to understand abstract religious discourses regarding the soul and its passions through embodied experiences of hunger, appetite, and emotion" (Winchester 2016, p. 589). He further shows how embodied practices and conceptual knowledge are mutually informing and not necessarily unidirectional. Thus, while various types of conceptual knowledge *emerge* from embodied dispositions, emergent forms of cultural knowledge can exert *downward causation* and influence embodied experiential knowledge as well.

This dynamic relationship is also evidenced in Cerulo's (2018) study of perfume evaluations. Cerulo finds that smell evaluations, perceptions of a perfume's intended message and audiences, and perceptions of context-appropriate uses of perfume are all culturally patterned, particularly by race. Through the interaction of embodied olfactory knowledge and

declarative knowledge of their cultural associations, respondents of unique backgrounds could decipher how, when, and for whom floral versus citrus versus spicy scents should be used. Thus, embodied knowledge can also play a role in the formation of cultural tastes and group boundary-drawing.

As a fairly new inquiry, relatively few sociological works focus on embodied knowledge (Ignatow 2007). However, a number of recent works—particularly on cultural production and reception—are filling this gap, examining embodied knowledge from high-end food tastes (Leschziner 2015), to affective opera listening (Benzecry 2011), to “heterosexual aesthetic labor” in men’s grooming salons (Barber 2016). Whether near-universal or culturally patterned, various forms of embodied knowledge provide the foundation for higher levels of conceptual knowledge that can vary significantly across groups.

Image Schemas

Emergent from embodied knowledge, image schemas represent a second and distinct type of cultural knowledge (Johnson 1987; Lakoff 1987). At this level, unmediated embodied knowledge gets conceptual form, which may be thought of as the emergent causal power of image schemas.

Image schemas are not actual images, but rather “recurring, dynamic pattern[s] of our perceptual interactions and motor programs that [give] coherence and structure to our experience” (Johnson 1987, p. xiv). Much like physics vectors, image schemas represent the most basic forms and relations that humans sense and perceive. Humans start life with image schemas that relate to bodily regulation, gain more images through general sensorimotor experience and experiences in particular environments, and through “cinemalike editing choices,” these newer images are “inserted in a logical frame over time” (Damasio 2010, p. 76).

They also emerge from all the senses. Thus, humans have auditory images, olfactory images, kinesthetic images, and gustatory images, although visual images predominate (Damasio 1994, p. 89; Johnson 1987, p. 24).

As a relatively limited repertoire of conceptual dynamics, image schemas enable and constrain the conceptual understandings humans can make, and they have been associated with patterns of reasoning in mathematics, law, science, philosophy, and other areas (Johnson 2005, p. 27). Studies from various cognitive science disciplines show that even our most complex scientific and philosophical ideas derive their conceptual meaning from various combinations of image schemas (Boroditsky 2000; Damasio 2010; Dodge and Lakoff 2005; Johnson 1987). Lizardo (2013, p. 166) even shows how image schemas enable and constrain how social scientists can conceptualize structure, agency, and their relationship: “when it comes to the conceptualization of social structure, some version of the organicist PART-WHOLE + ENTITY + LINK CIS appears to be the only game in town.”¹

Because they emerge from embodied knowledge, some cognitive linguists suggest that humans’ repertoires of image schemas are near-universal (Kövecses 2005, 2015; Lakoff and Johnson 1999). However, they are often culturally patterned in their salience and use, pointing to an important way that the declarative cultural knowledge that sociologists often focus on is tacitly structured (Kövecses 2005, 2015; Rotolo 2020). While most humans share a similar inventory of image schemas, they are used and combined in myriad ways.

¹ I follow the convention in literature on cognitive semantics of capitalizing names for image schemas (Johnson 1987; Lakoff and Johnson 1980, 1999).

The following list includes the most conventional and commonly used image schemas: CONTAINMENT/CONTAINER, PATH/SOURCE-PATH-GOAL, LINK, PART-WHOLE, CENTER-PERIPHERY, BALANCE, and the FORCE image schemas: ENABLEMENT, BLOCKAGE, COUNTERFORCE, ATTRACTION, COMPULSION, RESTRAINT, REMOVAL, DIVERSION (Johnson 1987; Lakoff 1987). The image schemas on this list recur across a wide variety of studies, and familiarity with them makes recognizing them in discourse easier. However, other lists of image schemas exist. While the above image schemas are offered by both Johnson (1987) and Lakoff (1987), fifteen additional image schemas appear on one of their lists: CONTACT, SCALE, NEAR-FAR, SURFACE, FULL-EMPTY, PROCESS, CYCLE, ITERATION, MERGING, MATCHING, SPLITTING, OBJECT, COLLECTION, UP-DOWN, FRONT-BACK. When identifying an image schema, the key task is to identify the most fundamental mental representation of sensorimotor experience (Grady 2005).

Though several scholars have pointed to the importance of image schemas for structuring cultural knowledge (Cerulo 2010; Ignatow 2007; Lizardo 2013; Rotolo 2020; Winchester 2016; Wood et al. 2018), they have received little empirical attention in sociology. However, cognitive linguists point to many potential applications. For example, the SOURCE-PATH-GOAL image schema provides “our most fundamental knowledge of motion” (Lakoff and Johnson 1999, p. 34). This image schema provides the conceptual dynamics to understand, reason, and elaborate on “where we are going,” “where we have been,” and “what we must go through” for a variety of subjects. Numerous sociological works are premised on understanding their subjects in terms of paths, journeys, walks, tracks, ways, and roads (e.g. Bell 1980; Wuthnow 1994). However, they often overlook that these are not just conventional metaphors. Rather, they tie to a fundamental way that humans perceive, evaluate, and reason.

Image schemas may also be important sources of variation in cultural understandings. For example, what some perceive as a unidirectional PATH (e.g. “history is on a forward path”), others may perceive as a CYCLE (e.g. “history repeats itself”). How people define groups, which are fundamentally CONTAINERS, may vary by different contextual experiences. Often, the FORCE image schemas—like ENABLEMENT, COMPULSION, and CONSTRAINT—structure different conceptions of agency among actors (e.g. “I can”, “I must,” “I can’t”).

Some cognitive scientists theorize the further division of image schemas into different categories, based on infant development and schema complexity (Mandler and Cánovas 2014). Others theorize “compound image schemas” made from combinations of different image schemas (Kimmel 2005). Recognizing these theories points to the complexities and challenges of making a parsimonious conceptual model of cultural knowledge. However, these small variants do not complicate the basic notion that image schemas are a distinct type of cultural knowledge composed of abstract conceptual relations, which emerge from embodied knowledge and structure more complex cognitions.

Conceptual Metaphors

Conceptual metaphors emerge when image schematic knowledge is tied to a specific, concrete conceptual domain. Thus, the emergent causal power of conceptual metaphors involves making conceptual knowledge concrete. Known best from Lakoff and Johnson’s *Metaphors We Live By* (1980), conceptual metaphors are not primarily consciously articulated metaphors, but rather implicit analogous mappings between a concrete “source” domain and an abstract “target” domain. Humans frequently rely on the qualities of concrete conceptual domains to elaborate their understandings of abstract conceptual domains.

One of the most common conceptual metaphors studied is “life is a journey,” in which humans use concrete elements related to journeys—like paths, boundaries, and obstacles—to understand, reason about, and explain the abstract concept of life. While humans may sometimes think about life as a journey consciously, it usually remains a tacit metaphorical relationship, illustrated when people say things like, “It’s been a hard *road*, but I’m *getting through* it,” “One day, I’ll *get there*,” or “You just have to keep *striving forward*.”

This conceptual metaphor is structured by the SOURCE-PATH-GOAL image schema described above, which provides spatiotemporal dynamics about movement in a particular direction. Because of their familiarity, the analytical difference between the PATH image schema and the “life is a journey” conceptual metaphor may not seem obvious. However, the “life is a journey” conceptual metaphor comprises a higher, emergent level of cultural knowledge because it involves a concrete domain (“journey”), which further enables and constrains the types of assumptions, reasonings, and justifications one might use to understand life. A person’s cultural and idiosyncratic notions of a “journey” enable a wider range of metaphorical reasoning than a forward-directed PATH alone.

Additionally, humans’ understandings of a subject may rely on the same underlying image schema, and yet unique conceptual metaphors can significantly alter their meanings. For example, the SOURCE-PATH-GOAL image schema can structure both the “life is a rollercoaster” and “life is a race” conceptual metaphors, which involve paths from a source toward a goal. However, the specific metaphorical domains of “rollercoaster” and “race” might lead to different lines of understanding and reasoning, like that life “has its ups and downs” versus “the first to the finish line wins,” respectively. Thus, conceptual metaphors represent an

emergent entity in that they depend on image schemas and embodied knowledge (i.e. relationality, synchronic emergence) while also having more complex and novel properties.

Conceptual metaphors are an especially useful unit of analysis for sociologists because they are often so taken-for-granted in discourse that respondents do not realize they are using them. Quinn (2018, p. 174) argues that the tacit assumptions that connect concrete source domains to abstract target domains in conceptual metaphors cannot be consciously made in real time. They are based on previously assumed connections between the source and target. For example, if a student responded to the question, “How was the exam,” with the response, “I got *through* it,” they would be implicitly associating the exam with a journey, almost certainly without their conscious knowledge of doing so.

Studying conceptual metaphors, then, can help sociologists avoid a host of potential biases that pose challenges in deliberate discourse, such as social desirability bias or “justificatory talk” (Swidler 2001). Drawing on her own data on views of love and marriage, as well as Swidler’s (2001), Quinn (2018) shows that eight conceptual metaphors tacitly structure Americans’ understandings of marriage. Because of the widely shared and recurrent use of these eight conceptual metaphors, Quinn argues, contrary to Swidler (2001), that Americans’ understandings of marriage are actually highly coherent. She argues that toolkit theorists miss this coherence in cultural understandings because their analyses focus on explicit discourse and lack specific units of analysis by which to organize and examine the data. Conceptual metaphors offer another way that researchers can systemically analyze culture at the level of implicit conceptualizations and can point to patterns of understanding that may not be obvious in respondents’ inarticulate fumbling to find the right words.

As for sociological work on conceptual metaphors, Winchester (2016) argues for their crucial role in linking embodied dispositions to the semantic level of discourse. His work on fasting conceptualizes “embodied metaphor as a form of cultural cognition in action,” directly linking conceptual metaphors to action (Winchester 2016, p. 585). Ignatow (2003, 2004, 2009a) shows how conceptual metaphors help create moral orders, shape participation in group discourse and influence various lines of reasoning, and play an important role in structuring the habitus of different groups.

Similar to image schemas, conceptual metaphors can indicate cultural coherence and/or variation across groups in a way that is not obvious at the level of discourse. However, because they are tied to concrete domains, there is greater potential for cultural variation in how respondents use conceptual metaphors compared to image schemas, and their social correlates may be more traceable (e.g. “spiritual hunger” tied to religious fasting—Winchester 2016).

Cultural Models

Cultural models emerge from combinations of different lower-level entities (i.e. multiple determination), and their distinct causal power involves rendering certain features of a subject salient (Kövecses 2005). They consist of “presupposed, taken-for-granted models of the world” (Holland and Quinn 1987, p. 4), and as simplified prototypes, they highlight some features of subjects while overlooking others. Cultural models have received moderate attention in sociology, due to work on the subject in cognitive anthropology (Bennardo and de Munck 2014; D’Andrade 1995; Holland and Quinn 1987; Quinn 2005; Shore 1998).

Cognitive anthropologists sometimes use cultural “model” and “schema” interchangeably. Similarly, many sociologists seem to be referring to cultural models when using “cultural schema” (e.g. Frye 2017; Hunzaker and Valentino 2019), drawing on DiMaggio’s

(1997, p. 269) broad definition of schemas as “knowledge structures that represent objects or events and provide default assumptions about their characteristics, relationships, and entailments under conditions of incomplete information.” However, it is important to keep “schemas” and “models” analytically distinct. While image schemas are individual-level phenomena that provide basic conceptual dynamics (e.g. CONTAINER), cultural models involve more complex associations between concepts (e.g. evolution is incompatible with religion). They also require some social consensus, even if that consensus remains tacit.

Cultural models can be divided into both personal “mental models” and shared “instituted models,” and failure to distinguish the two has led to confusion among scholars (Shore 1998). Mental models represent individuals’ prototypical understandings, and instituted models represent external, shared understandings. The externalization of personal mental models can influence instituted models, and the internalization of instituted models can influence personal mental models (Berger and Luckmann 1966); thus, “taken together they comprise the basic dialectic of cultural life” (Shore 1998, p. 312).

For this reason, cultural models are “among the most important sources of creativity and continuity in cultural life” (Shore 1998, p. 117). Cultural knowledge in the form of cultural models is both durable and dynamic, and it involves adapting shared, idealized instituted models to specific individual needs that are more complex and idiosyncratic (Fauconnier and Turner 2008). Coulson (2006) calls humans’ ability to adapt overly simplistic cultural models to ever-changing social realities “conceptual blending.” Shared cultural models never produce total homogeneity in understandings, but rather “a tendency for personal models to overlap far more than they would if left to purely individual experience” (Shore 1998, p. 48).

Quinn (2018) suggests that the eight conceptual metaphors Americans use for marriage—lastingness, mutual benefit, sharedness, compatibility, difficulty, effort, risk, and success—together compose a culture model, providing a general framework or set of contours about what marriage is, how it works, and how those in a marriage should act. She acknowledges that other types of marriages and other cultural models exist, but in her empirical investigation, the recurrence of these eight implicit metaphors indicated highly similar prototypical understandings; thus, they together compose a dominant instituted model, whereas respondents' personal mental models slightly adapt this instituted model to their idiosyncratic needs. Quinn also argues that the stability of this cultural model gives it powerful motivational force.

While cultural models relate to action by providing the taken-for-granted, normative assumptions of how something is done, their relation to action is complex. People can have multiple cultural models on similar subjects, the cultural models can be interdependent, they can be contradictory, and they can also be hierarchically or sequentially structured (Holland and Quinn 1987; Smith et al. 2020). For example, Smith et al. (2020, p. 11) show that American adults' cultural model of how to transmit religion to their children relies on a “constellation” of eight other cultural models pertaining to related conceptual domains, such as the purpose of life, the nature of children, the task of parenting, and religion's value and truth. As complex clusters of taken-for-granted assumptions and prototypical knowledge, cultural models' coherence, consistency, durability, “sharedness,” and relation to action are all empirical questions.

Discourse and Public Culture

From various combinations of these lower-level entities, declarative personal culture emerges, primarily in the form of written or spoken discourse. Unlike the lower levels, discourse can be consciously shaped in real time, can invoke complex narratives and illustrations, can

evoke powerful emotions in ways the other levels cannot, and most importantly, it is explicit. It also tends to follow certain rules, styles, grammar conventions, and sequencing. Thus, a person may convey highly tangential thoughts in discourse in the attempt to “get around” to what they actually wish to communicate. Sometimes, they may not be able to communicate intended lower-level knowledge at all (Polanyi 1958). The variability and manipulability of discourse is a key reason why scholars have increasingly examined lower-level, nondeclarative personal culture.

Finally, public culture emerges from individual declarative culture and lower-level types of cultural knowledge. It represents culture external to the person, and thus its emergent causal power is its externalization (Lizardo 2017). Public culture takes a variety of forms, such as collective discourse, frames, codes, symbols, material artifacts, and vocabularies. It can also exert *downward causation* on individual discourse and the cultural knowledge beneath it. For example, McDonnell (2014) describes the impact of AIDS posters in Ghana (a form of public material culture) on lower-level automatic cognitions, as well as the interplay of conscious and automatic cognitions as respondents came up with ideas about effective public AIDS awareness materials. Jacobs (1996) shows how various newspaper depictions of the Rodney King beating differently influenced how the acts were interpreted by individuals, likely by appealing to different cultural models and rendering different features of the event salient.

The concepts of *morphostasis* and *morphogenesis*, first theorized by Buckley (1967) and further developed by Archer (2010), are useful for thinking about how emergence and downward causation together constitute the relation of personal culture and public culture, or individual and society. Morphostasis refers to the condition that “all entities depend for their continued existence on the maintenance of their parts in the particular set of relations that is required to constitute the whole from them” (Elder-Vass 2010, p. 33). That is, the existence of an entity

depends not just on its original cause, but also on causes that maintain it over time. The continuity of public cultural forms depends, in part, on the continuity of certain lower-level forms of culture. Morphostasis helps explain the stability and durability of culture at different levels.

On the other hand, morphogenesis refers to the development of a new entity or change in an existing entity brought about by new combinations of entities or external environmental forces (Archer 2010). Morphogenesis explains how creativity, variation, and change occur in the otherwise stable structure of emergent cultural knowledge. For example, when someone shares a new idea (from their personal cultural knowledge) on social media, it can shape public culture in powerful ways. Of course, the size of its impact depends on several other factors, like the size of the audience it reaches. However, like morphostasis, morphogenesis is constantly happening, and the two processes help explain stability and change in culture.

The relations of entities in this model also parallel Berger and Luckmann's (1966) theory of the social construction of reality as an *ongoing dialectic process*. The ongoing development of new emergent relations, some continuity of relational structures over time, and downward causation are analogous to externalization, objectification, and internalization, respectively. However, Berger and Luckmann's theory specifically concerns the relationship of personal culture to public culture, rather than the relations of lower-level nondeclarative entities.

Finally, this model is also compatible with work on *distributed cognition* (Hutchins 1995; Norton 2020). The distributed cognition framework seeks to move beyond the boundaries of individual bodies to focus on "systems where cognition is distributed in heterogeneous networks, often including multiple individuals and the diverse systems that they use for processing that information" (Norton 2020, p. 51). The emergent relation of public culture to personal cultural

knowledge, as well as the causal capacity of public culture to exert downward causation, offers a sound theoretical explanation that helps resolves the unnecessary depiction of culture *versus* cognition (Kurakin 2020; Lizardo et al. 2020; Norton 2020). It explains how they work together.

THE EMPIRICAL CASE OF AMERICAN RELIGIOUS UNDERSTANDINGS

To illustrate how these levels of cultural knowledge relate empirically, I draw on my research from the 2014-2016 Intergenerational Religious Transmission Project (IRTP).² Seeking to better understand American adults' religious backgrounds, current religious engagement, and efforts to transmit religion to their children, the IRTP consists of 215 semi-structured, in-person interviews with religiously affiliated parents from across the United States. Respondents were selected using stratified quota sampling and vary by social class, race and ethnicity, family structure, region, religious tradition, and level of religious commitment.

I focus specifically on respondents' understandings of *religion's role in life* and draw on a subsample of 50 interviews selected to preserve the diversity of the larger stratified sample. Prior to examining any interviews, I selected 5 respondents from each of the 10 religious traditions analyzed: black Protestant, Buddhist, conservative Protestant, Hindu, Latino Catholic, Jewish, mainline Protestant, Mormon, Muslim, and white Catholic. In selecting respondents from each religious tradition, I included a roughly equal amount of men and women, as well as variation in location, education level, social class, and religious commitment in order to analyze further potential sources of difference. Rotolo (2020) presents greater detail about this sample.

² Directed by Christian Smith at the University of Notre Dame and funded by Lilly Endowment Inc. More information on study design and analysis can be found in Smith et al. (2020).

While respondents' explicit discourse on religion's role in life often appears inarticulate, unreflective, fragmented, and improvised, considering these four types of nondeclarative cultural knowledge illuminates implicit layers of coherence in individual understandings, as well as significant patterns of variation in understandings across different groups.

Because I used existing interview data, I started by studying understandings at the level of image schemas embedded in the discourse. I could not directly observe embodied practices nor other forms of embodied knowledge. In analyzing a wide range of discourse across respondents of highly diverse backgrounds, I identified only five image schemas used by respondents to understand religion's role in their lives: PATH, SOURCE, CENTER, CONTAINER, and LINK, which are discussed further in Rotolo (2020). All of these image schemas are on the conventional lists of cognitive linguists and are thought to be near-universal.

While I did not empirically observe respondents' embodied dispositions or everyday experiences in the world, there are numerous near-universal experiences that help explain the use of these conventional image schemas. The PATH image schema is fundamentally about forward movement through space and emerges from walking and other types of motion experienced by the body. The SOURCE image schema, which denotes the origin of a PATH, emerges from similar sensorimotor knowledge. Humans frequently distinguish objects in a CENTER from those in the periphery. Likewise, CONTAINERS (e.g. cups, boxes, bags, vehicles) and LINKS (e.g. ropes, belts, plugs, stitches) are regular, though often unnoticed, parts of everyday experience. Nearly universal embodied experiences and associations enable these nearly universal, emergent image schemas. That said, the salience of these image schemas for religion could also tie to respondents' specific embodied experiences with religion, such as religious pilgrimages (PATH) or primarily practicing religion inside a religious building (CONTAINER).

While many image schemas are near-universal, how they are applied to specific subjects often varies. Using factor analyses and regression models, Rotolo (2020) finds three significant patterns of variation in image schematic understandings of religion's role in life.

First, women and those of higher education levels used the LINK and CENTER image schemas more frequently and the PATH image schema less frequently than other respondents. In context, these patterns were associated with an existential and metaphysical understanding of religion's role involving a CENTER identity and a LINK to reality, as opposed to a more practical understanding of religion involving everyday navigation of life's PATH. Second, black Protestant respondents used the SOURCE and PATH image schemas more frequently than others, which is consistent with theological emphases in the black Protestant tradition, such as the Exodus narrative and imagery of journeying, striving, and seeking the Promised Land in religious hymns and spirituals (Du Bois 1903). Third, Muslims, Hindus, Buddhists, and Mormons used the CONTAINER image schema more than respondents in other traditions, which tied to their self-understandings as religious minorities in America (i.e. they feel contained). It also tied to particularities they described as "within" their religion.

None of these patterns were obvious from focusing on the deliberate features of respondents' discourse. However, after identifying these implicit image schemas, it became clear that respondents' understandings were relatively coherent and consistent. Likewise, it became clear that respondents of certain demographics understood religion's role in significantly different ways.

These five image schemas structure a greater variety of conceptual metaphors. Table 1 shows summary statistics of the top metaphors used by respondents in relation to lower-level image schemas. In some categories, the various metaphors relate to a single conceptual

metaphor, like “religion is a journey.” In other categories, different conceptual metaphors are used. For example, in the SOURCE category, “foundation” suggests the conceptual metaphor “religion is a building/structure,” whereas “roots” suggests “religion is a tree.”

Table 1: Summary of Variation in Metaphors and Lower-Level Image Schemas for Religion; N=50

Image Schema	Metaphors	Frequency of Metaphor	Number of Respondents Using the Metaphor
PATH Uses= 217 N= 50	Path	39	23
	Way	39	18
	Something to Follow	15	10
	Direction	15	8
	Walk	8	8
	57 Other Metaphors...		
SOURCE Uses= 130 N= 40	Foundation	53	24
	Go Back To	8	7
	Base	8	6
	Background	5	5
	Roots	6	4
	32 Other Metaphors...		
CENTER Uses= 96 N= 27	Core	14	6
	Who You Are	6	5
	Central Component	3	3
	In the Center	2	2
	Inner Compass	3	2
	45 Other Metaphors...		
CONTAINER Uses= 87 N= 28	In/Within	48	17
	Structure	7	3
	Framework	3	3
	Don't Go Outside	3	2
	Realm	3	1
	16 Other Metaphors...		
LINK Uses= 69 N= 25	Grounding	10	7
	Stick to	5	5
	Anchor	5	4
	Adhere to	5	4
	Keeps You from	4	2
	Floating		
	24 Other Metaphors...		

Each of these metaphorical domains enable and constrain further lines of reasoning. For example, “religion is a journey at sea” was a common modification of “religion is a journey” and led respondents to describe religion in terms of “having a compass,” “being anchored,” “sailing stormy seas,” and “riding the wave.” This line of reasoning had different meanings and implications from those who used “religion is your roots,” which involved imagery about being grounded, rooted, planted, and seeded. This exemplifies how different declarative imagery emerges from different conceptual metaphors.

Similar to Quinn (2018), I argue that the relative coherence, consistency, and constraint of these concepts suggests an implicit cultural model of religion’s role in life, which can be propositionally articulated as: religion provides a path for the journey of life, giving people a source of knowledge from which to start, a core identity, a containing framework to distinguish right from wrong, and a link to reality so one is not floating in meaninglessness. The limitation of respondents’ understandings to only five image schematic concepts renders certain features of religion salient while neglecting others, which constitutes a cultural model. While some respondents emphasized certain components more than others, every component of the cultural model was found across every demographic category I analyzed, including gender, religious tradition, education, and class (with one small exception likely due to small sample size). Many respondents expressed all of the components involved in the model. Thus, these understandings suggest a fairly coherent, dominant instituted cultural model of religion’s role in life, despite some culturally significant patterns of variation in personal mental models.

This cultural model clarifies why most respondents understood religion as “a normal, valuable, meaningful, and worthy part of life, at least in its general principles, not something deserving of skepticism or indifference” (Smith et al. 2020, p. 50). It also differs from other

imaginable cultural models of religion's role in life. For example, by rendering different features of religion salient, one could imagine a cultural model of religion as a tool for control, manipulation, and oppression across history. Similarly, a person involved in a highly political religious community might have a cultural model of religion as a vehicle for social change. In my sample of religious adults, however, these conceivable alternative models were not present.

Finally, after uncovering these implicit patterns of cultural knowledge, it became clear how respondents expanded and smoothed over their implicit understandings with a variety of narratives, images, and justifications at the level of conscious discourse. Often, this involved drawing on elements of public culture. For example, when Christian respondents used nautical metaphors to describe religion's role, they often drew on water imagery from the Bible. They described religion's role with references to biblical stories, like the creation of land and sea, Noah's ark and the flood, Moses' parting of the Red Sea, and Jesus' teachings in or near water. Of course, this was only one of the metaphorical domains they used and reflects only part of their larger religious narrative. However, it was crucial in their process of meaning-making. Biblical illustrations, then, seemed to exert downward causation on their personal cultural understandings and shaped the metaphorical domains and lines of reasoning they shared.

Figure 2 visualizes an overview of the emergent levels of religious understanding I identify.

Figure 2: Emergent Levels of Americans' Understandings about Religion's Role in Life

As further illustration of this model and how the data can be analyzed, I describe the respondents who scored highest on each of the three factor analysis patterns I identified. These respondents display the greatest variation in cultural understandings at the deepest level I analyzed.

The highest scoring respondent on the first factor, which involved more frequent use of the LINK and CENTER image schemas and less frequent use of the PATH image schema, was a middle class white Mormon woman from Indiana. She described religion's role as "very, very *central* in most of my life, it always has been like it's...I've grown up *in* this same faith and so it's always been *a part*." She further deliberates, "It's always that, that should I be doing this and, and...so it comes back to that *anchor*, that *grounding* that I just need to trust God's plan." By focusing only on this respondent's articulacy, as well as her frequent pauses and rephrasing, her understanding of religion seems relatively undeveloped. However, the italicized words

emphasize the lower-level conceptual knowledge that recurs throughout her explanations of religion's role in life, suggesting a relatively coherent understanding.

When talking about her son, this respondent claimed, "I think that if he could have that relationship with God that it would bring some *stability* and an *anchor*. I don't see him having an *anchor* in life right now, he just kind of, wherever the winds blow, he goes." She grapples with her son having a different religion and claims, "I think it's easier when it's the same religion. The, you know, the more similar your *core*, your *foundation* is, I believe it makes it easier." In another part of the interview about her religious practices, she also claims, "Because we are both *rooted* in faith, I feel like the church is a supplementary teaching." In this case, her understanding about being "rooted" in faith impacts her reasoning about her religious actions.

While this respondent's religious discourse appeared confused at times, analyzing the various levels of cultural knowledge beneath it revealed otherwise undetectable patterns of both coherence and variation. Table 2 shows the image schemas and related metaphors she used to describe religion. Together, these data indicate the boundaries of her cultural model of religion. Her description of religion's role in life largely revolved around the LINK and CENTER image schemas. She used the "religion is an anchor" conceptual metaphor most commonly to describe religion as a LINK. Additionally, this conceptual metaphor leads to the respondent's discursive portrayal of her son as a ship without an anchor and who goes "wherever the winds blow." From the lower-level conceptual metaphor, then, a conscious line of reasoning using the particular metaphorical domain emerges.

Table 2: Image Schemas and Metaphors for Religion from Mormon Woman from Indiana

Image Schema	Metaphors	Frequency of Metaphor
LINK Uses= 10	Anchor	6
	Grounded	2
	Stability	1
	Rooted in	1
CENTER Uses= 5	Core	3
	Central	1
	Part of who I am	1
SOURCE Uses= 2	Foundation	2
PATH Uses= 1	Paths	1
CONTAINER Uses= 1	In	1

An upper middle class black Protestant woman from Texas scored highest on the second factor, which involved greater use of the PATH and SOURCE image schemas. This respondent used the PATH and SOURCE image schemas exclusively to describe her understanding of religion's role in life. Unlike the first respondent's existential understanding of religion, this respondent's understanding largely involved practical navigation of everyday realities.

This respondent said, "Without God, it's just no—there's no *way*. He is the *way*. So I just feel that that is the *way* I need to be, I try to keep my kids that *way*—keeping them more involved so they won't *stray* out." She further claimed, "I feel if you don't have no sense of *direction*, you just confused. You know, you just thinking that fast money is the *way* to go." As a result, she reasons, "Just pray, whatever you do, just pray to make sure, you know, 'keep me on that *direction* and keep me on that *path*.'" When discussing her children's religion, she emphasizes the importance of teaching them early because "if they have that *foundation*, they know *where to come to*. They know *where to come back to*."

Overall, this respondent's understanding of religion was even more succinct than the first respondent and basically came down to the idea that "religion is a foundation that keeps you

from straying from the path.” This is evidenced in Table 3 by the respondent’s frequent use of the metaphorical references “the way,” “direction,” “stray,” and “foundation.” Unlike the first respondent, this respondent drew on public culture frequently, mentioning the Bible at many points in the interview and reiterating Proverbs 22:6: “Train children in the right way, and when old, they will not stray.” Her frequent references to scripture suggests a stronger downward causal influence of public religious culture on her understanding.

Table 3: Image Schemas and Metaphors for Religion from Black Protestant Woman from Texas

Image Schema	Metaphors	Frequency of Metaphor
PATH Uses= 18	Way	6
	Direction	4
	Stray	4
	Path	2
	Heading there	1
	Where you stand	1
SOURCE Uses= 8	Foundation	7
	Come back to	1

A middle class Indian Muslim woman from Indiana scored highest on the third factor, which involved greater use of the CONTAINER image schema. Her understanding of religion as a CONTAINER and frequent references to “structure” metaphors and being “within” religion were markedly different from the respondents above.

This respondent described religion’s primary role as “some kind of *structure* for me to understand what’s right and wrong.” She also uses the CONTAINER image schema in describing her hopes for her children: “I want them to be able to distinguish like what’s right from wrong, you know. Um, and to *draw that from* their faith.” Often, this respondent prefaced her statements with the qualifier, “*Within* our faith,” to distinguish the unique “container” of her religion from other traditions. She also contrasts her specific religious practices with other forms of religious engagement, like the introspective faith described by the first respondent above: “I

didn't see that spirituality, uh, in fact faith *within* um, the South Asian culture...[My religion] is often more a *following rules*...instead of introspection.” Table 4 shows the full list of image schemas and metaphors used by this respondent.

Table 4: Image Schemas and Metaphors for Religion from Muslim Woman from Indiana

Image Schema	Metaphors	Frequency of Metaphor
CONTAINER Uses= 13	In/Within	10
	Structure	2
	Draw from	1
PATH Uses= 9	Way	4
	Guide	2
	To get over there	1
	Following	1
	Toward	1
LINK Uses= 3	Adhere to	2
	Hold onto	1
SOURCE Uses= 3	Fundamentals	1
	Reinforced	1
	Foundation	1

Comparatively, the Mormon respondent referenced religion's role 19 times using 5 different image schemas and 10 different metaphors. The black Protestant respondent referenced religion's role 26 times using 2 different image schemas and 8 different metaphors. The Muslim respondent referenced religion 25 times using 4 different image schemas and 12 different metaphors. As I describe above, these patterns of implicit understanding comprise unique *personal* cultural models of religious understanding, rendering certain elements of religion salient while overlooking others. However, when considered with the full sample, they also suggest the existence of a larger *instituted* cultural model, in which certain aspects of religion are rendered salient across a wide sample of people.

Analyzing these various levels of religious understanding demonstrates the principles of relationality and synchronic emergence, given that the higher levels of cultural knowledge depend on certain lower-level knowledge structures. They demonstrate multiple determination,

given that several levels simultaneously influence respondents' overall understanding. They also demonstrate downward causation, given how respondents' individual understandings are shaped by higher-level public cultural forms.

Taken together, attention to these different types of cultural knowledge and their relations indicates several layers of what are often collectively called “schemas” beneath the level of conscious discourse. How a researcher might interpret these findings and theorize their implications for “how culture works” could differ drastically based on the level(s) analyzed.

DISCUSSION

Insights from the cognitive sciences about the influence of unconscious, automatic cognitions have led to the expansion of sociological research analyzing nondeclarative personal culture beneath the level of conscious discourse. However, the absence of a coherent conceptual framework has led to ambiguous claims about both culture and cognition, as well as confusion about exactly where and how scholars agree and disagree (Kurakin 2020; Lizardo 2017; Lizardo et al. 2020; Patterson 2014; Smith 2016).

This paper addresses these issues by theorizing a conceptual model of four types of nondeclarative cultural knowledge, their emergent relations, and their relations to discourse and public culture. I argue that considering these theoretically-grounded units of analysis can improve analyses of nondeclarative personal culture, as well as larger theoretical claims about how culture and cognition work. As mentioned, this model is not necessarily comprehensive, and some scholars divide particular elements into smaller subcategories as new insights about cognition develop (e.g. Kimmel 2005; Mandler and Cánovas 2014). However, the model provides a clear conceptual framework for thinking about various types of nondeclarative culture and their relations, and it has implications for important discussions in sociology.

Theorizing How Culture Works

Questions about “how culture works” often ask whether cultural understandings are coherent, consensual, motivating, internalized, and/or patterned in specific ways (e.g. Cerulo 2014; Jerolmack and Khan 2014; Lamont and Swidler 2014; Martin 2010; Pugh 2013; Quinn 2018; Smith et al. 2020; Swidler 1986, 2001; Vaisey 2009, 2014). The model I propose suggests that these are all empirical questions, and their answers may differ at different emergent levels of cultural knowledge. Thus, these questions need to be considered in relation to the particular level(s) analyzed.

In my discussion of American religious understandings, I find that respondents’ understandings are relatively coherent at the level of image schemas, despite respondents’ occasional incoherence at the level of discourse. Only five image schematic concepts were used to describe religion’s role, and often, particular respondents focused on only one or two. I also found significant patterns of cultural variation at the level of image schemas and demonstrate further variation at the level of conceptual metaphor.

Studies of cultural understandings often make implicit conclusions about how both culture and cognition work, based on superficial patterns in declarative cultural understandings or by drawing on the ambiguous “schema” concept. However, ontological claims about culture and cognition should not be made based on the empirical or epistemological limitations of our analyses. Rather, studying how culture works requires having some clear conceptions—ideally coherent, organized, and theoretically-grounded conceptions—about what culture is composed of. The types of cultural knowledge outlined in this paper provide a range of different levels at which researchers can consider the organization and influence of culture.

(Individual) Cognition versus (Collective) Culture?

This paper's emergence-based model of different levels of culture also helps resolve theoretical tensions between “culturalist” and “cognitivist” analytical approaches. Several articles in a recent issue of the *American Journal of Cultural Sociology*—dubbed “phase 2.0 of the neuro-cognitive turn in cultural sociology” (Smith 2020, p. 2)—highlight this issue (Kurakin 2020; Lizardo et al. 2020; Mast 2020; Norton 2020). Notably, they all reference the concept of emergence in some way.

These articles discuss whether “cognitive culturalism” contradicts “representationalism” (Mast 2020), whether “culture as cognition” makes sense or is redundant (Kurakin 2020; Norton 2020), whether “cognitive cultural” approaches are too individualist (Norton 2020), and how the “inside the head” versus “outside the head” binary can be overcome (Lizardo et al. 2020). Generally, they all acknowledge that overcoming the tension between “cognitivists” (who often focus on individual representations) and “culturalists” (who often focus on collective representations) involves “build[ing] an explicit model of how culture and cognition are interrelated” (Kurakin 2020, p. 80).

The proposed model explicitly describes how personal culture and public culture relate and mutually influence each other. It explains how complex cultural logics and representations emerge from lower-level knowledge structures. It also explains how higher-level cultural forms can exert downward causation on individual understandings. The flexibility and contingency of how these different entities exert causal influence prevents “bottom-up” or “top-down” reductionism, in which either lower-level cognitions or higher-level cultural representations structure fixed, absolute meanings.

Advancing Methods for Studying Culture

Finally, considering these various levels of nondeclarative culture has implications for studying cultural understandings and sociological methods more generally. This paper primarily focuses on interviews and shows how attention to each of these types of cultural knowledge illuminates patterns of understanding that are often not apparent on “the surface” of discourse. It describes the complex, emergent levels of cultural knowledge that together form people’s declarative understandings of and reasoning about a subject. It also points to specific units of analysis that researchers can use to study nondeclarative personal culture.

A second methodological implication from this model involves considering the types of culture embedded in researchers’ interview or survey questions. Often, we are aware of how using certain words or mentioning a certain topic can prime certain answers from respondents at the level of discourse. However, the proposed model illustrates many levels of cultural knowledge simultaneously at work, and several studies show that priming can take place at all of these levels (e.g. Boroditsky and Ramscar 2002; Sato et al. 2015; Setchi and Asikhia 2019). Williams and Bargh (2008) show how the embodied experience of physical warmth, which could be caused by something as simple as a hot room, can promote “warm” interpersonal judgments. Boroditsky (2000) finds that respondents primed with an image schema involving an OBJECT moving along a PATH were more likely to reason about time as a moving object, whereas those primed with a scenario of persons moving relative to objects were more likely to reason about time as a stationary object that people move past. Thibodeau and Boroditsky (2013) show how providing subjects different metaphorical domains covertly influences their reasoning about crime policy.

All of this suggests that we likely prime our respondents in more ways than we intend or detect. For example, questions like “Do you like where your life is *heading*,” “Do you think you are on the right *track*,” and “What made you decide to go in that *direction*” all rely on the “life is a journey” conceptual metaphor. A respondent who replies, “It’s been a *journey*” or “I’m still *going*” may simply be fitting their thoughts to the implicit conceptual domain already established by the interviewer.

Prompting certain schematic or metaphorical domains is inescapable for many questions we may wish to ask in interviews. Thus, researchers need to think carefully about how they ask their questions, as well as the potential consequences of how they ask their questions. While priming a respondent with a certain conceptual domain may be problematic in some circumstances, it can also be used strategically. Priming respondents with certain schematic or metaphorical domains may make better grounds for comparing responses. It could also force respondents to think in terms of a certain concept of interest or enable the interviewer to decipher whether a certain conceptual domain even fits respondents’ understandings. For example, an interviewer may intentionally ask questions that make respondents think about a subject in terms of a PATH, prompting them to think in terms of spatial distances.

This implicit prompting of respondents also applies to surveys. Both the questions asked on surveys and the possible answers offered may involve particular schematic or metaphorical domains. For example, asking “how important is *following* your religion” versus “how *central* is your religion” versus “how *connected* are you to religion” all involve different image schemas (PATH, CENTER, and LINK, respectively), which may resonate with people differently. While many respondents may already conceptualize subjects in the way that survey questions ask about them, it is important to consider the possible implications of certain schematic or metaphorical

framings. It is possible to even have contradictions between the metaphorical domains of the survey question and the domains provided in the answers from which to choose.

The levels of cultural knowledge theorized in the paper cannot be taken as comprehensive of the structures and processes involved in forming cultural understandings. The specifics of each type are still debated in the cognitive sciences and are frequently refined, much like work on different modes of cognition. The way these entities interact is complex, and often they are “cobbled,” “sculpted,” “compressed,” and “blended” together in mature, emergent understandings (Coulson 2006; Fauconnier and Turner 2008). Researchers may also find patterns of understanding that are significantly more or less complex than those described in this paper.

However, the proposed model provides a theoretically-grounded starting point for thinking about various types of nondeclarative cultural knowledge, which influence a wide range of declarative culture and public cultural forms. It demonstrates how culture and cognition work together, as opposed to against each other. Its description of interrelated, emergent levels of cultural knowledge also offers new perspective for discussions of how culture works and methods for studying culture more broadly.

REFERENCES

- Archer, Margaret. 1995. *Realist Social Theory: The Morphogenetic Approach*. New York: Cambridge University Press.
- Archer, Margaret. 2010. Routine, Reflexivity and Realism. *Sociological Theory* 28 (3): 272-303.
- Barber, Kristen. 2016. *Styling Masculinity: Gender, Class, and Inequality in the Men's Grooming Industry*. New Brunswick: Rutgers University Press.
- Bedau, Mark A. 1997. Weak Emergence. Pp. 375-399 in *Philosophical Perspectives: Mind, Causation, and World*, edited by J. Tomberlin. Malden: Blackwell.
- Bell, Daniel. 1980. *The Winding Passage: Sociological Essays and Journeys 1960-1980*. New York: Basic Books.
- Bennardo, Giovanni, and Victor de Munck. 2014. *Cultural Models: Genesis, Methods, and Experiences*. New York: Oxford University Press.
- Benzecry, Claudio E. 2011. *The Opera Fanatic: Ethnography of an Obsession*. Chicago: University of Chicago Press.
- Berger, Peter L., and Thomas Luckmann. 1966. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Garden City: Anchor Books.
- Bhaskar, Roy. 1975. *A Realist Theory of Science*. Leeds: Leeds Books.
- Blair-Loy, Mary. 2001. Cultural Constructions of Family Schemas: The Case of Women Finance Executives. *Gender and Society* 15 (5): 687-709.
- Blau, Peter M. 1981. Introduction: Diverse Views of Social Structure and Their Common Denominator. Pp. 1-23 in *Continuity in Structural Inquiry*, edited by P. M. Blau and R. K. Merton. Beverly Hills: Sage.

- Bloch, Maurice. 2012. *Anthropology and the Cognitive Challenge*. Cambridge: Cambridge University Press.
- Boroditsky, Lera. 2000. Metaphoric Structuring: Understanding Time through Spatial Metaphors. *Cognition* 75 (1): 1-28.
- Boroditsky, Lera, and Michael Ramscar. 2002. The Roles of Body and Mind in Abstract Thought. *Psychological Science* 13 (2): 185-189.
- Buckley, Walter. 1967. *Sociology and Modern Systems Theory*. Englewood Cliffs: Prentice-Hall.
- Cerulo, Karen A. 2002. *Culture in Mind: Toward a Sociology of Culture and Cognition*. New York: Routledge.
- Cerulo, Karen A. 2010. Mining the Intersections of Cognitive Sociology and Neuroscience. *Poetics* 38 (2): 115-132.
- Cerulo, Karen A. 2014. Reassessing the Problem. *Sociological Methods & Research* 43 (2): 219-226.
- Cerulo, Karen A. 2018. Scents and Sensibility: Olfaction, Sense-Making, and Meaning Attribution. *American Sociological Review* 83 (2): 361-389.
- Coleman, James S. 1990. *Foundations of Social Theory*. Cambridge: Harvard University Press.
- Coulson, Seana. 2006. Conceptual Blending in Thought, Rhetoric, and Ideology. Pp. 187-208 in *Cognitive Linguistics: Current Applications and Future Perspectives*, edited by G. Kristiansen, M. Achard, R. Dirven, and F. J. Ibáñez. Berlin and New York: Mouton de Gruyter.
- Damasio, Antonio. 1994. *Descartes' Error*. New York: Penguin Books.
- Damasio, Antonio. 2010. *Self Comes to Mind: Constructing the Conscious Brain*. New York: Vintage Books.

- D'Andrade, Roy. 1995. *The Development of Cognitive Anthropology*. Cambridge: Cambridge University Press.
- de Laat, Kim, and Shyon Baumann. 2016. Caring Consumption as Marketing Schema: Representations of Motherhood in an Era of Hyperconsumption. *Journal of Gender Studies* 25 (2):183-199.
- DiMaggio, Paul. 1997. Culture and Cognition. *Annual Review of Sociology* 23: 263-287.
- Dodge, Ellen, and George Lakoff. 2005. Image Schemas: From Linguistic Analysis to Neural Grounding. Pp. 57-91 in *From Perception to Meaning: Image Schemas in Cognitive Linguistics*, edited by B. Hampe. Berlin: Mouton de Gruyter.
- Dreyfus, Hubert L., and Stuart E. Dreyfus. 1999. The Challenge of Merleau-Ponty's Phenomenology of Embodiment for Cognitive Science. Pp. 103-120 in *Perspectives on Embodiment: The Intersections of Nature and Culture*, edited by G. Weiss and H. F. Haber. New York: Routledge.
- Du Bois, W. E. B. 1903. *The Souls of Black Folk*. Chicago: A. C. McClurg and Co.
- Durkheim, Émile. 1964 [1894]. *The Rules of Sociological Method*. New York: Free Press.
- Ecklund, Elaine Howard, Jared L. Peifer, Virginia White, and Esther Chan. 2017. Moral Schemas in Articulation and Intuition: How Religious People Evaluate Human Reproductive Genetic Technologies. *Sociological Forum* 32 (2): 277-297.
- Edgell, Penny, and Kathleen E. Hull. 2017. Cultural Schemas of Religion, Science, and Law in Talk About Social Controversies. *Sociological Forum* 32 (2): 298-320.
- Elder-Vass, Dave. 2010. *The Causal Power of Social Structures: Emergence, Structure, and Agency*. Cambridge: Cambridge University Press.

- Evans, Jonathan St. B. T. 2008. Dual-Processing Accounts of Reasoning, Judgment, and Social Cognition. *Annual Review of Psychology* 59: 255-278.
- Farrell, Justin. 2011. Environmental Activism and Moral Schemas: Cultural Components of Differential Participation. *Environment and Behavior* 45 (3): 399-423.
- Fauconnier, Gilles, and Mark Turner. 2008. Rethinking Metaphor. Pp. 53-66 in *Cambridge Handbook of Metaphor and Thought*, edited by R. Gibbs. New York: Cambridge University Press.
- Foster, Jacob G. 2018. Culture and Computation: Steps to a Probably Approximately Correct Theory of Culture. *Poetics* 68: 144-154.
- Francescotti, Robert Michael. 2007. Emergence. *Erkenntnis* 67 (1): 47-63.
- Frye, Margaret. 2017. Cultural Meanings and the Aggregation of Actions: The Case of Sex and Schooling in Malawi. *American Sociological Review* 82 (5): 945-76.
- Grady, Joseph E. 2005. Image Schemas and Perception: Refining a Definition. Pp. 35-55 in *From Perception to Meaning: Image Schemas in Cognitive Linguistics*, edited by B. Hampe. Berlin: Mouton de Gruyter.
- Greve, Jens. 2012. Emergence in Sociology: A Critique of Nonreductive Individualism. *Philosophy of the Social Sciences* 42 (2): 188-223.
- Holland, Dorothy, and Naomi Quinn. 1987. *Cultural Models in Language and Thought*. Cambridge: Cambridge University Press.
- Humphreys, Paul. 1996. Aspects of Emergence. *Philosophical Topics* 24 (1): 53-70.
- Humphreys, Paul. 2008. Synchronic and Diachronic Emergence. *Minds and Machines* 18 (4): 431-442.

- Hunzaker, M.B. Fallin, and Lauren Valentino. 2019. Mapping Cultural Schemas: From Theory to Method. *American Sociological Review* 84 (5): 950-981.
- Hutchins, Edwin. 1995. *Cognition in the Wild*. Cambridge: MIT Press.
- Ignatow, Gabriel. 2003. "Idea Hamsters" on the "Bleeding Edge": Profane Metaphors in High Technology Jargon. *Poetics* 31 (1): 1-22.
- Ignatow, Gabriel. 2004. Speaking Together, Thinking Together? Exploring Metaphor and Cognition in a Shipyard Union Dispute. *Sociological Forum* 19 (3): 405-433.
- Ignatow, Gabriel. 2007. Theories of Embodied Knowledge: New Directions for Cultural and Cognitive Sociology? *Journal for the Theory of Social Behavior* 37 (2): 115-135.
- Ignatow, Gabriel. 2009a. Culture and Embodied Cognition: Moral Discourses in Internet Support Groups for Overeaters. *Social Forces* 88 (2): 643-669.
- Ignatow, Gabriel. 2009b. Why the Sociology of Morality Needs Bourdieu's *Habitus*. *Sociological Inquiry* 79 (1): 98-114.
- Jacobs, Ronald. 1996. Civil Society and Crisis: Culture, Discourse, and the Rodney King Beating. *American Journal of Sociology* 101 (5): 1238-1272.
- Jerolmack, Colin, and Shamus Khan. 2014. Talk is Cheap: Ethnography and the Attitudinal Fallacy. *Sociological Methods & Research* 43 (2): 178-209.
- Johnson, Mark. 1987. *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*. Chicago: University of Chicago Press.
- Johnson, Mark. 2005. The Philosophical Significance of Image Schemas. Pp. 15-33 in *From Perception to Meaning: Image Schemas in Cognitive Linguistics*, edited by B. Hampe. Berlin: Mouton de Gruyter.

- Kaidesoja, Tuukka, Matti Sarkia, and Mikko Hyryläinen. 2019. Arguments for the Cognitive Social Sciences. *Journal for the Theory of Social Behavior* 49: 480-498.
- Kim, Jaegwon. 1999. Making Sense of Emergence. *Philosophical Studies* 95: 3-36.
- Kimmel, Michael. 2005. Culture Regained: Situated and Compound Image Schemas. Pp. 285-311 in *From Perception to Meaning: Image Schemas in Cognitive Linguistics*, edited by B. Hampe. Berlin: Mouton de Gruyter.
- Kövecses, Zoltán. 2005. *Metaphor in Culture: Universality and Variation*. Cambridge: Cambridge University Press.
- Kövecses, Zoltán. 2015. *Where Metaphors Come From: Reconsidering Context in Metaphor*. Oxford: Oxford University Press.
- Kurakin, Dmitry. 2020. Culture and Cognition: The Durkheimian Principle of Sui Generis Synthesis vs. Cognitive-Based Models of Culture. *American Journal of Cultural Sociology* 8 (1): 63-89.
- Lakoff, George. 1987. *Women, Fire and Dangerous Things. What Categories Reveal about the Mind*. Chicago: The University of Chicago Press.
- Lakoff, George, and Mark Johnson. 1980. *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lakoff, George, and Mark Johnson. 1999. *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.
- Lamont, Michèle, and Ann Swidler. 2014. Methodological Pluralism and the Possibilities and Limits of Interviewing. *Qualitative Sociology* 37 (2): 153-171.
- Leschziner, Vanina. 2015. *At The Chef's Table: Culinary Creativity in Elite Restaurants*. Stanford: Stanford University Press.

- Lewes, George Henry. 1875. *Problems of Life and Mind*. London: Trübner & Co.
- Lizardo, Omar. 2013. Re-conceptualizing Abstract Conceptualization in Social Theory: The Case of the “Structure” Concept. *Journal for the Theory of Social Behaviour* 43 (2): 55-80.
- Lizardo, Omar. 2017. Improving Cultural Analysis: Considering Personal Culture in its Declarative and Nondeclarative Modes. *American Sociological Review* 82 (1): 88-115.
- Lizardo, Omar, Brandon Sepulvado, Dustin S. Stoltz, and Marshall A. Taylor. 2020. What Can Cognitive Neuroscience Do for Cultural Sociology? *American Journal of Cultural Sociology* 8 (1): 3-28.
- Mandler, Jean M., and Christóbal Pagán Cánovas. 2014. On Defining Image Schemas. *Language and Cognition* 6 (4): 510-532.
- Martin, John Levi. 2010. Life’s a Beach but You’re an Ant, and Other Unwelcome News for the Sociology of Culture. *Poetics* 38 (2): 229-244.
- Mast, Jason L. 2020. Representationalism and Cognitive Culturalism: Riders on Elephants on Turtles All the Way Down. *American Journal of Cultural Sociology* 8 (1): 90-123.
- McDonnell, Terence E. 2014. Drawing Out Culture: Productive Methods to Measure Cognition and Resonance. *Theory and Society* 43: 247-274.
- McDonnell, Terence E., Christopher A. Bail, and Iddo Tavory. 2017. A Theory of Resonance *Sociological Theory* 35 (1): 1-14.
- Mill, John Stuart. 1851 [1843]. *A System of Logic, Ratiocinative and Inductive*. London: J.W. Parker.

- Norton, Matthew. 2020. Cultural Sociology Meets the Cognitive Wild: Advantages of the Distributed Cognition Framework for Analyzing the Intersection of Cognition and Culture. *American Journal of Cultural Sociology* 8 (1): 45-62.
- Pagis, Michal. 2010. From Abstract Concepts to Experiential Knowledge: Embodying Enlightenment in a Meditation Center. *Qualitative Sociology* 33 (4): 469-489.
- Parsons, Talcott. 1949 [1937]. *The Structure of Social Action*. New York: Free Press.
- Patterson, Orlando. 2014. Making Sense of Culture. *Annual Review of Sociology* 40 (1): 1-30.
- Polanyi, Michael. 1958. *Personal Knowledge*. Chicago: Chicago University Press.
- Pugh, Allison J. 2013. What Good Are Interviews For Thinking About Culture? Demystifying Interpretive Analysis. *American Journal of Cultural Sociology* 1 (1): 42-68.
- Quinn, Naomi. 2005. *Finding Culture in Talk: A Collective of Methods*. New York, NY: Palgrave Macmillan.
- Quinn, Naomi. 2018. An Anthropologist's View of American Marriage: Limitations of the Tool Kit Theory of Culture. Pp. 139-184 in *Advances in Culture Theory from Psychological Anthropology*, edited by N. Quinn. Cham: Palgrave Macmillan.
- Rotolo, Michael. 2020. Religion Imagined: The Conceptual Substructures of American Religious Understandings. *Sociological Forum* 35 (1): 167-188.
- Sato, Manami, Amy J. Schafer, and Benjamin K. Berger. 2015. Metaphor Priming in Sentence Production: Concrete Pictures Affect Abstract Language Production. *Acta Psychologica* 156: 136-142.
- Sawyer, R. Keith. 2001. Emergence in Sociology: Contemporary Philosophy of Mind and Some Implications for Sociological Theory. *American Journal of Sociology* 107 (3): 551-585.

- Sawyer, R. Keith. 2003. *Improvised Dialogues: Emergence and Creativity in Conversation*. Westport: Greenwood.
- Sawyer, R. Keith. 2012. Response to “Emergence in Sociology.” *Philosophy of the Social Sciences* 42 (2): 270-275.
- Setchi, Rossitza, and Obokhai K. Asikhia. 2019. Exploring User Experience with Image Schemas, Sentiments, and Semantics. *IEEE Transactions of Affective Computing* 10 (2): 182-195.
- Sewell, William H. 1992. A Theory of Structure: Duality, Agency, and Transformation. *American Journal of Sociology* 98 (1): 1-29.
- Shore, Bradd. 1998. *Culture in Mind: Cognition, Culture, and the Problem of Meaning*. Oxford University Press.
- Smith, Christian. 2016. The Conceptual Incoherence of “Culture” in American Sociology. *The American Sociologist* 47 (4): 388-415.
- Smith, Christian, Bridget Ritz, and Michael Rotolo. 2020. *Religious Parenting: Transmitting Faith and Values in Contemporary America*. Princeton: Princeton University Press.
- Smith, Philip. 2020. The Neuro-Cognitive Turn in Cultural Sociology: From 1.0 to 2.0. *American Journal of Cultural Sociology* 8 (1): 1-2.
- Sperry, R. W. 1991. In Defense of Mentalism and Emergent Interaction. *The Journal of Mind and Behavior* 12 (2): 221-245.
- Stephan, Achim. 1999. Varieties of Emergentism. *Evolution and Cognition* 5 (1): 49-59.
- Strauss, Claudia, and Naomi Quinn. 1997. *A Cognitive Theory of Cultural Meaning*. Cambridge: Cambridge University Press.

- Summers-Effler, Erika, Justin Van Ness, and Christopher Hausmann. 2015. Peeking in the Black Box: Studying, Theorizing, and Representing the Micro-Foundations of Day-to-Day Interactions. *Journal of Contemporary Ethnography* 44 (4): 450-479.
- Swidler, Ann. 1986. Culture in Action: Symbols and Strategies. *American Sociological Review* 51 (2): 273-286.
- Swidler, Ann. 2001. *Talk of Love: How Culture Matters*. Chicago: The University of Chicago Press.
- Teller, Paul. 1986. Relational Holism and Quantum Mechanics. *British Journal for the Philosophy of Science* 37 (1): 71-81.
- Thibodeau, Paul H., and Lera Boroditsky. 2013. Natural Language Metaphors Covertly Influence Reasoning. *PLOS ONE* 8 (1): 1-7.
- Vaisey, Stephen. 2009. Motivation and Justification: Toward a Dual-Process Theory of Culture in Action. *American Journal of Sociology* 114 (6): 1675-1715.
- Vaisey, Stephen. 2014. The “Attitudinal Fallacy” Is a Fallacy: Why We Need Many Methods to Study Culture. *Sociological Methods & Research* 43 (2): 227-231.
- Vaisey, Stephen, and Margaret Frye. 2019. The Old One-Two: Preserving Analytical Dualism in Cognitive Sociology. Pp. 101-114 in *The Oxford Handbook of Cognitive Sociology*, edited by W. H. Brekhus and G. Ignatow. New York: Oxford University Press.
- Wacquant, Loïc. 2004. *Body & Soul: Notebooks of an Apprentice Boxer*. Oxford: Oxford University Press.
- Williams, Lawrence E., and John A. Bargh. 2008. Experiencing Physical Warmth Promotes Interpersonal Warmth. *Science* 322 (5901): 606-607.

- Winchester, Daniel. 2016. A Hunger for God: Embodied Metaphor as Cultural Cognition in Action. *Social Forces* 95 (2): 585-606.
- Wood, Michael Lee, Dustin S. Stoltz, Justin Van Ness, and Marshall Taylor. 2018. Schemas and Frames. *Sociological Theory* 36 (3): 244-261.
- Wuthnow, Robert. 1994. *Sharing the Journey: Support Groups and America's New Quest for Community*. New York: Free Press.
- Zerubavel, Eviatar. 1997. *Social Mindscales: An Invitation to Cognitive Sociology*. Cambridge: Harvard University Press.