

Culture, Cognition and Embodiment

Omar Lizardo, University of Notre Dame, Notre Dame, IN, USA

© 2015 Elsevier Ltd. All rights reserved.

Abstract

The study of relationship between the cultural and the mental in the social and human sciences stands at crossroads. The classical approach to this issue attempts to derive individual cognition from abstract cultural patterns external to the mind, and conceives of culture as an external, emergent order of symbols organized as 'systems.' These internalized 'symbols of mind' provide the essential foundation of individual cognition. In contrast to this view, we have a now growing set of perspectives emerging at the intersection of cognitive science, cultural and cognitive anthropology, developmental psychology, robotics, and the philosophy of mind and action. These 'embodied' approaches to cognition reject the classical view of cognition as the organization of sense data via recourse to conventional cultural symbols. Instead, cognition is seen as tightly linked to practical action and as inherently 'grounded' in the nonarbitrary features of human bodies as they relate to the material environment.

Introduction: Beyond the Classical Theory of Culture and Cognition

The study of relationship between the sociocultural and the mental in the social and human sciences stands at crossroads. On the one hand, there is the continued dominance of what the author refers to as the 'classical' approach to the relationship between the cultural and the mental. The classical approach attempts to derive individual cognition from abstract cultural patterns external to the mind, and conceives of culture as an emergent order of symbols organized as 'systems,' linked to their 'referents' by conventional (arbitrary) correspondence relations (Shore, 1996; Saussure, 1966). These internalized 'symbols of mind' provide the essential foundation of individual cognition. The human animal is a thinking animal insofar as it is a social (and socialized) animal (Geertz, 1973a,b,c; Berger and Luckmann, 1966). This is the stance characteristic of cultural theorists in anthropology and cultural and cognitive sociology starting with Durkheim, and continuing on to Parsons, Geertz, Zerubavel, and Alexander (Parsons, 1972, 1968; Zerubavel, 1999; Alexander, 2003).

On the other hand, we have a now growing (but heterogeneous) set of perspectives emerging at the intersection of cognitive science, cultural and cognitive anthropology, developmental psychology, robotics, and the philosophy of mind and action (Clark, 1997; Bloch, 1998a,c; Shore, 1996; Brooks, 1997; Ingold, 2000; Thelen and Smith, 2002; Lakoff and Johnson, 1999). This set of postclassical perspectives, usually glossed under the banner of 'embodied' approaches (e.g., Varela et al., 1991; Lizardo, 2012; Ignatow, 2009; Garbarini and Adenzato, 2004; Lakoff and Johnson, 1999; Gallese and Lakoff, 2005), reject the classical view of cognition as the organization of sense data via recourse to conventional cultural symbols. Instead, cognition is seen as tightly linked to practical action and as inherently 'grounded' in the nonarbitrary features of human bodies as they relate to the material environment (Bourdieu, 2000; Ingold, 2000; Shore, 1996). In this respect, the recent emphasis on both *embodiment* and *grounding* along with the equally resounding rejection of the view that personal experience is *constituted* via the internalization of external

symbols represents a recuperation of a theoretical legacy that was emphatically disavowed in twentieth century (Durkheim-inspired) social and cultural theory in anthropology and sociology (Ingold, 2000). This is an approach to cognition that anthropologist Maurice Bloch (1977, 1986) once referred to (provocatively) as a 'psychological' approach to cognition, in contrast to the then dominant (classical) 'anthropological' approach to the question.

In what follows, the author retains the broad thrust of Bloch's argument, but drops the invidious disciplinary labels. The author does this mainly because the issue is no longer one of choosing between 'psychology' (or cognitive science) and 'sociology' as Durkheim (1982) once suggested and as some contemporary theorists of the culture-cognition link – (e.g., Zerubavel, 1999) – continue to believe. In what follows, the author sticks to the 'classical' and 'embodied' labels to refer to these broad sets of perspectives since allegiance to either viewpoint cuts across all disciplines in the social and human sciences. The basic argument is that classical approaches to the question of the relationship between culture and cognition can no longer afford to ignore the challenge posed by embodied perspectives. More strongly, the author argues that embodied approaches to cognition pose such a strong challenge to the theoretical and conceptual core of the classical approach as to render the latter untenable as a future basis for the study of culture and cognition in the social sciences.

The rest of the article is organized as follows: first the basic claims, presuppositions, and parameters of the classical approach are outlined (in Section [The Classical Theory of Culture and Cognition](#)). Then the author goes on (in Sections [The \(Cognitive\) Problem of Internalization](#) and [The \(Cognitive\) Problem of Meaning](#)) to show that this approach runs into trouble (in relation to embodied approaches) on two fundamental issues in the study of culture and cognition: what he refers to as the (cognitive) problem of the internalization of culture and the problem of meaning (how persons use cultural symbols for representational purposes). The article closes (Section [Conclusion](#)) by outlining the broader implications of the argument.

The Classical Theory of Culture and Cognition

According to the classical view, culture is composed of abstract symbolic representations that require some sort of connection to arbitrary carriers of meaning in order to signify (i.e., to be meaningful). Proponents of this model presuppose that perceptual information that is gathered directly through the senses is 'meaningless' because it is composed of pre-conceptual, 'raw' stimuli that require processing, transduction, schematization, and linkage to symbolic structures in order to become meaningful. Traditional cultural theory follows Weber (1946), Berger and Luckmann (1966), and Geertz (1973d) in portraying actors as "...obsessed with sorting out empirical reality and, typifying from code to event" (Alexander, 2003: p. 124, italics added). Meaning comes only from the collective symbolic categories learnable through the culture. According to this perspective, culture consists of a conventional corpus of symbolic structures (which, following Saussure (1966), are conceptualized as the arbitrary coupling of amodal mental representations) with a material carrier of meaning. These representations organize sensory experience and thus partition the world into arbitrary categories of persons, things, and events (Leach, 1976; Douglas, 1986).

The classical theory follows the Kant-inspired dictum that primary experience is composed of lower order sensory information that carries unique, idiosyncratic, and evanescent content. In order for this sensory content to become generic and durable (and thus part of the cultural repertoire of the social agent), it must be linked to more permanent, mnemonically available symbolic systems (D'Andrade, 1992). That is, sensory events must be 'typified' (e.g., persons, objects, and event tokens must be seen as singular representative of a larger class of entities) in order to be meaningful to the person (Parsons and Shils, 1951; Berger and Luckmann, 1966). Accordingly, persons require symbolic cultural structures in order to generalize across sensory events and to characterize the most relevant features of experience so that it can be available for future use. Under this view, symbolic structures organize experience, but sensory information cannot be stored and encoded in the same format as it is encountered in the world. Instead, sensory input must be 'transduced' (or converted) into a different (symbolic) format distinct in nature from the 'raw' form that constitutes our phenomenological experience (Barsalou, 1999; Ignatow, 2009). The classical theory thus requires that the social agent be at the mercy of culturally acquired symbolic structures in order to classify different sorts of sensory stimulation as belonging to the same category (Durkheim, 1995; Durkheim and Mauss, 1967; Zerubavel, 1999; Douglas, 1966).

The classical theory of culture and cognition implicitly accepts without question the traditional philosophical division of mental contents into those that are directly traceable to the senses and those more abstract representations that have at best an indirect connection to experience (ideas) that we inherit from the rationalist philosophical tradition. The classic philosophical debate deals with the possible existence of mental representations that are not traceable to experience (e.g., Kantian a priori categories). This contrasts with the empiricist (from Hobbes to Locke to Hume) argument that

all mental contents are ultimately traceable to sensory stimulation and what were called ideas were simply weakened, schematic remnants ('images') of what once was a sensory event. Kant famously argued against British empiricism (and the Humean skepticism regarding the existence of preexperiential knowledge structures) that there had to be an analytical (and ontological) hiatus between abstract ideas (categories) and concrete sensory stimulation. The reason for this is that sensory stimulation in itself was insufficient to produce generalizable concepts with universal validity; empiricism results in irrationalism. The fact that such concepts existed thus required an appeal to a transcendental argument for the existence of knowledge structures that do not come from experience. Thus, the very conditions of possibility of meaningful knowledge required an argument to the best explanation, which clinched the necessary existence of preexperiential abstract conceptual structures that brought order and organization to perceptual experience.

In this respect, the classical sociological theory of culture and cognition can be thought of as a 'sociologization' – which we owe to Durkheim (1995) – of the original Kantian proposal, in which the notion of the a priori is dropped and the categories are given an empirical etiology in society. Durkheim accepted the perception versus high-level cognition binary but deconstructed it by moving the debate away from the realm of abstract epistemological argumentation and remapping the cognition/perception dichotomy to the distinction between the society and the individual (Durkheim, 2005). Even if most people would find the latter assertion questionable (and the Durkheimian argument was immediately assailed as question begging), the Kantian analytical division between sensory stimulation and abstract conceptual structure is kept intact in the modern theory of culture and cognition. The same goes for the Kantian presumption that direct sensory stimulation is inherently meaningless, noncategorical, and nongeneralizable unless it is fitted into a previously existing high-level system of abstract symbolic concepts (Schmaus, 2004).

According to Durkheim, sensory stimulation (and practical action in the world of objects) is evanescent and it is not sufficient for the formation of durable mental categories that generalize from experience. Here, Durkheim rejects both the classical empiricist and the then emerging 'pragmatist' argument for the emergence of general ideas from individual action all the same. Only particular forms of structured interaction in collective ritual occasions or (in differentiated societies) direct instruction from an authoritative representative of such a collectivity could instill in the mind durable categories of the understanding that had that property of generalizing or abstracting from experience. These categories were able to some extent to go beyond evanescent individual experience and had the ability to generate authoritative consent. For Durkheim, the *validity* of the categories was inseparable from their *cognitive authority*. Durkheim equated 'religious phenomena' with those mental contents that were not of individual but of collective origin and that were not open to revision in the light of further experience. Thus Durkheim linked the concept/percept, obligatory/elective, collective/individual, and sacred/profane dichotomies, with

the first and second pair of each opposition corresponding to one another (Durkheim, 1975).

Parsons (1972) accepted this theory of the origins of general ideas, reasoning that these are the components of a *cultural system* that individuals have to internalize in order to learn to typify experience. Parsons' only tweak on the Durkheimian account came in providing a more detailed social mechanism for the internalization of cultural contents. Parsons proposed that this internalization is realized via socialization in the family environment characteristic of differentiated societies that ensure the transmission of the overarching schemes of categorization that make up the culture. Parsons adapted the Freudian notion of 'introjection' to do the requisite explanatory job, but recast Freudianism as an anthropological theory of cognitive socialization. Parsons castigated Freud for proposing a 'simplistic' theory of the reality principle, which presumed that persons simply formed veridical representations of external reality without necessarily having recourse to a socially acquired system of cultural categories. According to Parsons, rather than taking this 'naïve' a-sociological stance, abstract, general representations of the objective environment had to be mediated by a system of collective categories that persons internalized via a learning process. According to Parsons (1964: p. 23), Freud "failed to take explicitly into account the fact that the frame of reference in terms of which objects are cognized, and therefore adapted to, is *cultural* and thus cannot be taken for granted as given but must be *internalized* as a condition of the development of mature ego-functioning" (italics added). Cultural sociologists today might reject the outdated mid-twentieth century psychoanalytic language, but they retain the notion that persons somehow come to internalize culture conceived as "a system of *generalized* symbols and their meanings" (Parsons, 1964: p. 29, italics added).

The (Cognitive) Problem of Internalization

Given this theoretical legacy, the classical theory of culture and cognition provides no way of conceptualizing the enculturation process other than through the metaphorical imagery of the (format-preserving) 'transfer' of objectified cultural contents (e.g., values, beliefs, propositions) *from the external environment into the 'internal' environment of the person*. Enculturation is thus (naturally) conceptualized as a learning process (Wrong, 1961) and learning as the re-creation of a copy of public culture within the cognitive environment of the actor. Traditional cultural theory thus presumes that persons become encultured subjects through a process of *internalization of objectified cultural contents* and that this internalization requires linguistic 'transmission' of these contents to be effected (Berger and Luckmann, 1966; Parsons, 1964). The major theoretical schools in cultural and cognitive sociology today differ only on the presumed nature of what this content is – whether it is 'values,' 'conceptual schemes,' 'classifications,' or 'codes' (Parsons, 1951, 1964; Zerubavel, 1993; Alexander, 2003). The *content* internalization requirement is never subject to question: all theorists continue to hold on to some modified version of the presumption that the final product of this process is the storage of some (systematic?) set of lingua form representations of external culture.

The basic idea is that in order for an agent to be socialized, something external, or social has to be converted into something internal or personal (on this score, see Wrong, 1961; Parsons, 1964; Bush and Simmons, 1981; Cook-Gumperz, 1973). We can then explain systematic cross-individual and cross-group variations in values, practices, and beliefs as well as the systematic *patterning* of individual behavior within a given society over time, as a result of the differential transmission and acquisition of the relevant cultural and symbolic endowment that characterizes a given collectivity (Cook-Gumperz, 1973: p. 3). Accordingly, one of the key meanings of socialization is essentially, "the [social] transmission of culture" (Wrong, 1961: p. 192; Long and Hadden, 1985: p. 42). This process of socially mediated cultural transmission is conceived as implying the mental modification of the agent who is at the receiving end of the cultural conduit mechanism (Parsons, 1964: p. 23). The production of a set of individuals who share cultural patterns through socialization (i.e., cultural transmission) processes can then be used to answer the question of the origins of systematic patterns of action in social collectivities.

Most American sociologists have recognized – ever since the influential critique of the functionalist penchant to equate socialization with the 'internalization' of values – that there are important limitations to this formulation of the socialization process (e.g., Heritage, 1984; Swidler, 1986). While contemporary sociologists are quick to reject the Parsonian value-internalization account (thus abandoning Parsons account of the emergence of social order via the production of value consensus), they continue to abide by the Parsonian model of *cognitive* socialization. In other words, most sociologists continue to believe that people share cultural contents (e.g., worldviews and beliefs) because they internalize those contents from the larger culture. As we saw above, for Parsons, *both* 'values' and the broader 'conceptual schemes' through which social actors come to know and classify the entire world of objects, agents, and situations have to be internalized (Parsons and Shils, 1951; Parsons, 1964). Any theory that presupposes that persons introject the basic categories with which they make sense of the world from the external environment is still essentially a 'Parsonian' theory of enculturation even if the adjective Parsonian has come to (wrongly) be limited to the 'value-internalization' account.

Accordingly, the Parsonian theory of culture and cognition is (discouragingly) hard to distinguish from contemporary approaches, especially in presuming the wholesale internalization of entire conceptual schemes by socialized actors (Long and Hadden, 1985). That there is something deeply wrong with this model of the process of socialization has been noted repeatedly, even as something pretty close to this model is still implicitly assumed in a lot of contemporary empirical research, especially in cultural and cognitive sociology. For instance, Alexander chides postfunctionalist conflict theory for failing to emphasize "...the power of the symbolic to shape interactions from within, as normative precepts or narratives that carry *internalized* moral force" (Alexander, 2003: p. 16; italics added; see also pp. 152–153 of the same book on the internalization of cultural codes). For his part, Eviatar Zerubavel notes that

[t]he logic of classification is something we must learn. Socialization involves learning not only a society's norms but also its distinctive classificatory schemas. Being socialized or acculturated entails knowing not only how to behave, but also how to perceive reality in a socially appropriate way. By the time she is three, a child has already internalized the conventional outlines of the category 'birthday present' enough to know that, if someone suggests that she bring lima beans as a present he must be kidding. (Zerubavel, 1999: p. 77)

Through what specific mechanisms 'the symbolic' or 'logics of classification' are actually learned or internalized by the social agent is never actually specified (Turner, 1994). Lizardo (2012) draws on embodied cognition approaches to propose a solution to the problem of the internalization of culture that rejects the representationalism of the classical account.

The (Cognitive) Problem of Meaning

The continued dominance of a conceptualization of culture as a 'superorganic' system of symbols, coupled with a conceptualization of cognitive socialization as the 'internalization' of those meanings, is inseparable from a view of internal experience as itself composed of symbols. Accordingly, a foundational substantive claim of the classical theory of the culture-cognition link is that cultural symbols either structure or constitute mental experience (Berger and Luckmann, 1966; Geertz, 1973a). From this perspective, humans are symbol-using animals because without symbols they would not be able to *make sense* of their experience. This links with the claim – noted above – that perceptual states are an incoherent, structureless flux that must be fitted into a grid of cultural symbols to be made meaningful (Leach, 1964; Martin, 2011). Stronger versions of this approach propose the substantive hypothesis that mental contents, insofar as they are the product of some form of learning or enculturation (conceptualized as the 'internalization' of external symbols), are themselves symbolic. That is, just as symbols exist 'in the world,' they exist (in similar format) as 'symbols of mind' (Kolars and Roediger, 1984).

Embodied approaches to the same set of issues summarily break with these well-entrenched tenets of classical cultural theory. Two basic observations deserve to be highlighted in this respect. First, from the perspective of embodied approaches to cognition, it is incoherent to suppose that mental experience can be 'symbolic' in the same sense that external cultural symbols are symbolic (Kolars and Smythe, 1984). Instead, there is a conceptualization of mental experience as inherently grounded in perception and action (Barsalou, 1999; Johnson, 1987). In this sense, the 'components' of mental experience do not and cannot share the 'bipolar' structure of cultural symbols, which must couple external vehicles to semantic content in order to be meaningful. The phenomenological contents of our mental experience, on the other hand, are *directly* meaningful (Johnson, 1987; Shore, 1996); they do not require symbolic 'transduction' to be made so (Barsalou, 1999). Precisely because external cultural symbols are bipolar couplings of form and meaning, the mind cannot be thought of as a 'repository' of symbols as naive models of learning and

memory implicitly presuppose (Roediger, 1984). Second, it is also incoherent to suppose that perceptual states lack structure or form an incoherent flux waiting for the order provided by linguistic or cultural categories (Gibson, 1979; Merleau-Ponty, 1962). Embodied approaches to language, semantics, and meaning construction show that abstract cultural categories are grounded on image-schematic conceptualizations extracted from perception and action, and not the other way around (Bloch, 1991, 1986; Johnson, 1987).

Proponents of embodied approaches to the culture-cognition link propose that the meaningful component of mental experience is primarily made up of repeated, embodied *simulations* over previous experiences. These simulations are enacted using neural structures that support the same sensory modality that made possible the experience in the first place (Barsalou, 1999). Consistent with so-called dual process models of learning and memory (Smith and DeCoster, 2000; McClelland et al., 1995), embodied cognition theorists propose that these simulations can reconstitute both the rich content of previous experiences as well as its most cross-modally recurrent features, which schematize over that content. Schematization implies the structured 'forgetting' of irrelevant or context-specific detail and the preferential retention only of those features that are correlated across instances (McClelland and Rumelhart, 1985). Accordingly, the conceptual potential accessed by cultural symbols covers both rich experiential content as well as memory for higher order correlations across experiences organized in the form of sensory schemas.

Embodied cognition theorists reject the influential proposal that recourse to linguistic symbols is a necessary component of meaningful experience (Bloch, 1998b). Even if persons did not have recourse to linguistic and cultural symbols, experience would be meaningful in this embodied sense, as it was for our prelinguistic ancestors. In contrast to some well-entrenched postulates of cultural theory, cultural symbols do not exist because they are required to produce meaningful mental experiences. Even if linguistic symbols did not exist, persons would still have a subjective – and even an intersubjective (Gallese, 2003) – grasp of the world as a meaningful structure. This grasp is based on our fundamental capacity to interact in the world and with our conspecifics at a basic embodied level and to extract the basic contours of experience from repeated exposure (Ingold, 2000). It is important to keep in mind that the 'perceptual symbols' constitutive of mental experience are not equivalent to the (external) 'cultural symbols' prominent in the classical theory. In embodied approaches to cognition, the use of cultural symbols is seen as the *exploitation* of external forms for purposes of evoking or accessing the rich semantic potential of the perceptual symbols constitutive of mental experience (Shore, 1996; Clark, 1997).

If cultural symbols neither constitute experience nor are they required (in the strong sense postulated by classical cultural theory) to 'make sense' of this experience, then what is their primary function? From an embodied cognition perspective, cultural symbols rather than constituting our subjective semantic potential *serve to evoke or access this pre-existing potential in patterned ways*. The semantic pole of a cultural symbol is typically linked to a set of perceptual symbols in their

role as the *simulators* for the concept(s) that constitutes the 'cognitive meaning' of the symbol (Barsalou, 2009, 2003, 1999; Strauss and Quinn, 1997). This *evocation model* of the way that cultural symbols operate contrasts sharply with both the 'constitutive' model inherited from structuralism and with the 'sense-making' model inherited from phenomenology (Bloch, 2006; Shore, 1996).

In contrast to the classical theory, which privileges conceptual structures over primary experience, in embodied cognition approaches experience is primary and 'abstract' concepts must be grounded in bodily experience (Johnson, 1987; Lakoff and Johnson, 1999). The basic presumption is that meaning is not 'symbolic' in the strong sense; instead, the potential to invoke a given semantic content must preexist the establishment of a link between an external symbol and that particular sort of mental experience. In this respect, cultural symbols do not 'mean' anything directly; instead, they serve as prompts for persons to engage in (individual or collective) acts of *meaning construction* (Shore, 1996). The semantic potential of cultural symbols thus depends on the meaning construction potential embodied in persons. This meaning construction potential is irreducibly experiential (Bourdieu, 1990; Ingold, 2000); it does not emerge from the 'internalization' of cultural symbols. Instead, persons use large compendia of (domain general) imaginative, cognitive, affective, and motor-schematic *capacities* to create meaning 'online' (Langacker, 1987; Fauconnier and Turner, 2003). Without the meaning construction potential generated by experience, cultural symbols do not mean much. Rather than providing the person with the capacity to create meaning cultural symbols *afford access* to richly detailed, multimodal forms of mental experience in context.

From the point of view of embodied approaches, the external cultural symbols of the classical theory neither serve as access points to conceptual content nor do they serve exclusively as prompts to initiate acts of meaning construction. In addition to these functions, external cultural symbols also serve as a way to usefully delimit and condense the sort of cognitive meaning that is thereby accessed, while at the same time serving as external coordinators of both evocation and meaning construction episodes. The reason for this is that for embodied cognition theorists, cultural knowledge (as embodied in persons) is not symbolic, amodal, or propositional in the usual sense and therefore not partitionable into delimited units of chunks. Instead, this knowledge is perceptually grounded and continuous, with one packet of knowledge blending onto others. This is what Clark (1987, 1997) has referred to as *superpositional storage*. As such, cognitive meaning as embodied in person has an 'associational' and not a 'rule-based' structure (Sloman, 1996), with one packet of meaning serving as an evocation point for a wide array of associated conceptual content. This implies that the orderly, structured evocation of meaning (as, e.g., observed in highly institutionalized domains) must rely on some sort of external support or 'scaffolding' (Clark, 1997; Lizardo and Strand, 2010), and that support is provided by cultural symbols. Cultural symbols coordinate access to the *delimited* chunks of conceptual knowledge in action, in a way that would be difficult (if not impossible) in their absence. This is particularly important in the case of ritual occasions, where

conceptual knowledge must be evoked in time in the right sequence and in the prescribed time and context (Durkheim, 1995).

Conclusion

From the perspective of embodied approaches to cognition, it is becoming increasingly clear that cultural theorists who depart from the classical perspective have mischaracterized the nature, purpose, and structure of human cognition and have thus given misleading accounts of the effects of socially acquired cultural categories on individual experience. Because of this, cultural and cognitive sociology lacks a credible (or coherent) account of what is it that 'culture' is supposed to do in order to influence individual cognition. One major source of incoherence (and embarrassment) for the classical account is that it requires that the person be subject to a massive, systematic process of socialization into the symbolic system that makes up the culture.

Yet, anthropologists became dissatisfied with the traditional culture concept, precisely because as much as they looked, such chronic exposure to socializing institutions and such repeated attempts on the part of socializing agents to impart the precepts that made up the culture were nowhere to be found. Yet persons somehow ended up becoming functioning members of their respective collectivities, while sharing explicit and implicit knowledge structures (Bourdieu, 1990; Palsson, 1994; Toren, 1999; Ingold, 2000). This means that persons somehow acquire culture, but without having recourse to the usual mechanisms of cultural transmission emphasized in the classical account. This phenomenon is similar to the 'poverty of stimulus' situation that Chomsky first noticed was the main weakness of the mid-twentieth century behaviorist account of language acquisition. In order for a coherent theory of the relationship between culture and cognition to get off the ground, the conception of what the raw material of experience is, and by implication both the conception of what 'culture' is and thus of how society manages to constrain thought and action, has to be radically altered.

See also: Culture and Institutional Logics; Embodied Social Cognition; Embodiment Theory; Embodiment and Culture; Human Cognition, Evolution of; Socialization in Infancy and Childhood; Visual Perception, Neural Basis of.

Bibliography

- Alexander, J.C., 2003. *The Meanings of Social Life: A Cultural Sociology*. Oxford University Press, New York.
- Barsalou, L.W., 1999. Perceptual symbol systems. *Behavioral and Brain Sciences* 22, 577–660.
- Barsalou, L.W., 2003. Abstraction in perceptual symbol systems. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences* 358 (1435), 1177–1187.
- Barsalou, L.W., 2009. Simulation, situated conceptualization, and prediction. *Philosophical Transactions of the Royal Society B: Biological Sciences* 364 (1521), 1281–1289.
- Berger, P.L., Luckmann, T., 1966. *The Social Construction of Reality*. Doubleday, New York.
- Bloch, M., 1977. The past and the present in the present. *Man* 12, 278–292.

- Bloch, M., 1986. From cognition to ideology. In: Fardon, R. (Ed.), *Knowledge and Power: Anthropological and Sociological Approaches*. Scottish University Press, Edinburgh, pp. 21–48.
- Bloch, M., 1991. Language, anthropology and cognitive science. *Man* 26, 183–198.
- Bloch, M., 1998a. Cognition and ethnography. In: *How We Think They Think: Anthropological Approaches to Cognition, Memory and Literacy*. Westview Press, Boulder, CO, pp. 39–53.
- Bloch, M., 1998b. Language, anthropology and cognitive science. In: *How We Think They Think: Anthropological Approaches to Cognition, Memory and Literacy*. Westview Press, Boulder, CO, pp. 3–21.
- Bloch, M., 1998c. What goes without saying: the conceptualization of Zafimaniry society. In: *How We Think They Think: Anthropological Approaches to Cognition, Memory and Literacy*. Westview Press, Boulder, CO, pp. 22–38.
- Bloch, M., 2006. Teknonymy and the evocation of the 'social' among the Zafimaniry of Madagascar. In: vom Bruck, G., Bodenhorn, B. (Eds.), *An Anthropology of Names and Naming*. Cambridge University Press, Cambridge, UK, pp. 97–114.
- Bourdieu, P., 1990. *The Logic of Practice*. Polity Press, Cambridge.
- Bourdieu, P., 2000. *Pascalian Meditations*. Stanford University Press, Stanford.
- Brooks, R.A., 1997. Intelligence without representation. In: Haugeland, J. (Ed.), *Mind Design II*. MIT Press, Cambridge, MA.
- Bush, D., Simmons, R., 1981. Socialization processes over the life course. In: Rosenberg, M., Turner, R. (Eds.), *Social Psychology: Sociological Perspectives*. Basic Books, New York, pp. 133–164.
- Clark, A., 1997. *Being There: Putting Brain, Body, and World Together Again*. MIT Press, Cambridge, MA.
- Cook-Gumperz, J., 1973. *Social Control and Socialization: A Study of Class Differences in the Language of Maternal Control*. Routledge/Thoemms Press.
- D'Andrade, R., 1992. Schemas and motivation. In: *Human Motives and Cultural Models*. Cambridge University Press, New York, pp. 23–44.
- Douglas, M., 1966. *Purity and Danger: An Analysis of Concepts of Purity and Taboo*. Routledge & Kegan Paul, London.
- Douglas, M., 1986. *How Institutions Think*. Syracuse University Press, Syracuse, NY.
- Durkheim, E., 1975. Concerning the definition of religious phenomena. In: Pickering, W.S.F. (Ed.), *Durkheim on Religion: A Selection of Readings with Bibliographies*. Routledge & Kegan Paul, Boston, MA, pp. 74–99.
- Durkheim, E., 1982. *The Rules of the Sociological Method*. Free Press, New York.
- Durkheim, E., 1995. *The Elementary Forms of the Religious Life*. Free Press, New York.
- Durkheim, E., 2005. The dualism of human nature and its social conditions. *Durkheimian Studies* 11 (1), 35–45.
- Durkheim, E., Mauss, M., 1967. *Primitive Classification*. University of Chicago Press, Chicago.
- Fauconnier, G., Turner, M., 2003. *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. Basic Books, New York.
- Gallesse, V., 2003. The manifold nature of interpersonal relations: the quest for a common mechanism. *Philosophical Transactions of the Royal Society of London B* 358, 517–528.
- Gallesse, V., Lakoff, G., 2005. The brain's concepts: the role of the sensory-motor system in conceptual knowledge. *Cognitive Neuropsychology* 22 (3), 455–479.
- Garbarini, F., Adenzato, M., 2004. At the root of embodied cognition: cognitive science meets neurophysiology. *Brain and Cognition* 56, 100–106.
- Geertz, C., 1973a. The growth of culture and the evolution of mind. In: Geertz, C. (Ed.), *The Interpretation of Cultures*. Basic Books, New York, pp. 55–83.
- Geertz, C., 1973b. The impact of the concept of culture on the concept of man. In: Geertz, C. (Ed.), *The Interpretation of Cultures*. Basic Books, New York, pp. 32–54.
- Geertz, C., 1973c. Person, time, and conduct in Bali. In: Geertz, C. (Ed.), *The Interpretation of Cultures*. Basic Books, New York, pp. 360–411.
- Geertz, C., 1973d. Thick description: towards an interpretive theory of culture. In: Geertz, C. (Ed.), *The Interpretation of Cultures*. Basic Books, New York, pp. 3–30.
- Gibson, J., 1979. *The Ecological Approach to Perception*. Houghton Mifflin, Boston.
- Heritage, J., 1984. *Garfinkel and Ethnomethodology*. Polity Press, Cambridge.
- Ignatow, G., 2009. Culture and embodied cognition: moral discourses in Internet support groups for overeaters. *Social Forces* 88 (2), 643–669.
- Ingold, T., 2000. *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. Routledge, London.
- Johnson, M., 1987. *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason*. University of Chicago Press, Chicago.
- Kolers, P., Roediger, H.L., 1984. Procedures of mind. *Journal of Verbal Learning and Verbal Behavior* 23 (4), 425–449.
- Kolers, P., Smythe, W., 1984. Symbol manipulation: alternatives to the computational view of mind. *Journal of Verbal Learning and Verbal Behavior* 23 (3), 289–314.
- Lakoff, G., Johnson, M., 1999. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. Basic Books, New York.
- Langacker, R.W., 1987. *Foundations of Cognitive Grammar. In: Theoretical Prerequisites, vol. I*. Stanford University Press, Stanford, CA.
- Leach, E., 1964. Anthropological aspects of language: animal categories and verbal abuse. In: Lenneberg, E.H. (Ed.), *New Directions in the Study of Language*. MIT Press, Cambridge, pp. 23–63.
- Leach, E.R., 1976. *Culture & Communication*. Cambridge University Press, New York.
- Lizardo, O., 2012. Embodied culture as procedure: cognitive science and the link between subjective and objective culture. In: Warde, A., Southerton, D. (Eds.), *The Habits of Consumption, COLLeGIUM: Studies across Disciplines in the Humanities and Social Sciences, vol. 12*. Helsinki Collegium of Advanced Studies, Helsinki, Finland, pp. 70–86.
- Lizardo, O., Strand, M., 2010. Skills, toolkits, contexts and institutions: clarifying the relationship between different approaches to cognition in cultural sociology. *Poetics* 38 (2), 205–228.
- Long, T., Hadden, J., 1985. A reconception of socialization. *Sociological Theory* 3 (1), 39–49.
- Martin, J.L., 2011. *The Explanation of Social Action*. Oxford University Press, New York.
- McClelland, J., McNaughton, B., O'Reilly, R., 1995. Why there are complementary learning systems in the hippocampus and neocortex: insights from the successes and failures of connectionist models of learning and memory. *Psychological Review* 102, 419–457.
- McClelland, J., Rumelhart, D., 1985. Distributed memory and the representation of general and specific information. *Journal of Experimental Psychology: General* 114 (2), 159–188.
- Merleau-Ponty, M., 1962. *Phenomenology of Perception*. Routledge, London.
- Parsons, T., 1951. *The Social System*. Free Press, New York.
- Parsons, T., 1964. The superego and the theory of social systems. In: *Social Structure and Personality*. Free Press, New York, pp. 17–33.
- Parsons, T., 1968. Cooley and the problem of internalization. In: Reiss, A.J. (Ed.), *Cooley and Sociological Analysis*. University of Michigan Press, Ann Arbor, MI, pp. 48–67.
- Parsons, T., 1972. Culture and social systems revisited. *Social Science Quarterly* 53 (2), 253–266.
- Parsons, T.E., Shils, E.A., 1951. *Toward a General Theory of Action*. Cambridge University Press, Cambridge.
- Roediger, H., 1984. Does current evidence from dissociation experiments favor the episodic/semantic distinction? *Behavioral and Brain Sciences* 7, 252–254.
- Saussure, F., 1966. *Course in General Linguistics*. McGraw-Hill, New York.
- Schmaus, W., 2004. *Rethinking Durkheim and His Tradition*. Cambridge University Press, New York.
- Shore, B., 1996. *Culture in Mind: Cognition, Culture, and the Problem of Meaning*. Oxford University Press, New York.
- Sloman, S.A., 1996. The empirical case for two systems of reasoning. *Psychological Bulletin* 119, 3–22.
- Smith, E., DeCoster, J., 2000. Dual-process models in social and cognitive psychology: conceptual integration and links to underlying memory systems. *Personality and Social Psychology Review* 4 (2), 108–131.
- Swidler, A., 1986. Culture in action: symbols and strategies. *American Sociological Review* 51, 273–286.
- Thelen, E., Smith, L.B., 2002. *A Dynamic Systems Approach to the Development of Cognition and Action*. The MIT Press, Cambridge.
- Turner, S.P., 1994. *The Social Theory of Practices*. University of Chicago Press, Chicago.
- Varela, F., Thompson, E., Rosch, E., 1991. *The Embodied Mind: Cognitive Science and Human Experience*. The MIT Press, Cambridge, MA.
- Weber, M., 1946. The social psychology of the world religions. In: Mills, H.H.G., Wright, C. (Eds.), *From Max Weber: Essays in Sociology*. Oxford University Press, New York, pp. 267–301.
- Wrong, D.H., 1961. The oversocialized conception of man in modern sociology. *American Sociological Review* 26, 183–193.
- Zerubavel, E., 1993. *The Fine Line: Making Distinctions in Everyday Life*. University of Chicago Press, Chicago.
- Zerubavel, E., 1999. *Social Mindscapes: An Invitation to Cognitive Sociology*. Harvard University Press, Cambridge, MA.