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A Companion to Cognitive Anthropology

Edited by David B. Kronenfeld, Giovanni Bennardo, Victor C. de Munck, and Michael D. Fischer

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A Companion to Cognitive Anthropology

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James Boster is a professor of cognitive, psychological, and linguistic anthropology at the University of Connecticut. His earlier work concerned how patterns of intracultural variation reflect the ways in which culture is learned and transmitted, and how the patterns of correspondence between different systems of biological classification reflect pan-human perceptual strategies drawing common inferences from similar experience. His current research focuses on how people understand themselves and each other, and in how intra- and intercultural variation in emotions, personality, and values is patterned.

F. K. L. Chit Hlaing (F. K. Lehman) has engaged in fieldwork largely in Burma and Southeast Asia, where he grew up. His BA was in mathematics, his Ph.D. in anthropology and linguistics. He has applied mathematics in his ethnographic and linguistic work, beginning with his dissertation, which was on the cultural history of India. This led him early into cognitive science and generative linguistics from the end of the

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Victor C. de Munck is an associate professor at SUNY New Paltz. His specialty is cognitive anthropology and his cultural areas of specialization are Sri Lanka, Macedonia, Lithuania, Russia, and the USA. He is the author of five books – two on methods, an urban ethnography on Vilnius (with three co authors), an ethnography of a Sri Lankan village, and a book entitled *Culture, Self and Meaning* – and of over 50 articles in academic journals. His areas of research are cross-cultural research, cultural models, self and identity, romantic love, and the synthesis of qualitative and quantitative methods. Two recent areas of research are a focus on psychic unity or sameness across people and cultures, and processes of the development of intimate dyads versus public identities.

Roy Ellen is professor of anthropology and human ecology at the University of Kent and director of its Centre for Biocultural Diversity. He received his anthropological training at the London School of Economics and has worked largely on issues relating to the environment and knowledge systems in the Moluccas. His recent publications include a monograph, *On the Edge of the Banda Zone: Past and Present in the Social Organization of a Moluccan Trading Network* (2003); a collection of essays, *The Categorical Impulse: Essays in the Anthropology of Classifying Behaviour* (2006); and two edited works, *Ethnobiology and the Science of Humankind* (2006) and *Modern Crises and Traditional Strategies: Local Ecological Knowledge in Island Southeast Asia* (2007). He is a Fellow of the British Academy and President of the Royal Anthropological Institute between 2007 and 2011.

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John B. Gatewood is a cognitive anthropologist at Lehigh University in Bethlehem, Pennsylvania. His principal research interest is the social organization of knowledge or socially distributed cognition, which he has studied in a variety of contexts, such as commercial fishing boats, university admissions, credit unions, and tourism sites. His recent research focuses on conjoining the cultural models approach with cultural consensus analysis, as well as methodological refinements to cultural consensus analysis.

Miriam Noël Haidle received her doctoral and habilitation degrees in prehistory and paleoanthropology from the University of Tübingen, Germany, in 1996 and 2006. She is the coordinator of "The Role of Culture in Early Expansions of Humans" Research Center of the Heidelberg Academy of Sciences and Humanities. Current work about her special focus on tool behavior and the evolution of mind has been published in "Working Memory Capacity and the Evolution of Modern Cognitive Capacities – Implications from Animal and Early Human Tool Use" (*Current Anthropology* 51/S1, 2010, S149–S166).

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Brian Hazlehurst is a senior investigator at Kaiser Permanente's Center for Health Research where he studies how clinicians think, make decisions, and use technology such as electronic medical records. He believes that these technologies shape cognitive

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Madelyn Iris, director of the Leonard Schanfield Research Institute, CJE SeniorLife, has worked for over 20 years studying topics related to Alzheimer's disease and diagnosis-seeking, protective services for older adults, and social service program evaluation. She is an adjunct associate professor in the departments of Psychiatry and Preventive Medicine, Feinberg School of Medicine and the Department of Anthropology, Northwestern University. Her current research focuses on factors related to time to diagnosis of AD, how family caregivers make decisions about AD diagnosis seeking, cultural and social factors related to beliefs about AD, as well as elder abuse and self-neglect. She has recently published "The Development of a Conceptual Model for Understanding Elder Self-Neglect" with John Ridings and Kendon Conrad in the *Gerontologist* (2010).

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Kateryna Maltseva earned her Ph.D. degree in anthropology from the University of Connecticut where she currently teaches. She is interested in the use of multi-item scales to research complex cultural dimensions (such as values, norms, attitudes, etc.) and in quantitative methods to address conceptual problems in social sciences. She has done fieldwork in Sweden, the Ukraine, and the United States.

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Introduction

This Companion volume is aimed at providing an overview of where cognitive anthropology is today and at giving a sense of where the field is going. The overview necessarily entails some attention to what in the past shaped the field's current nature. Cognitive anthropology, while clearly a sub-field of cultural anthropology, is and has been closely related to linguistics and linguistic anthropology. Additionally cognitive anthropology was one of the important early constituents of cognitive sciences – a connection that we aim at revivifying. Thus we see this volume as speaking importantly to elements of mainstream anthropology, linguistics, and cognitive sciences, as well as more narrowly to the intersection of the three.

Cognitive anthropology is a diverse field, and that diversity is well reflected in this volume – as one can see both from the range of topics and from the range of citations in the various contributions. To give a fuller range of this diversity, later on in this introduction I will talk a little about what we were *not* able to include in the volume. But under this diversity lie some consistent elements: a concern with culturally shared and variable distributed complex cognitive systems, including how such systems work, how they are structured, how they differ from one culture to another, how they are learned and passed on, and how they are adapted by people to contexts. As we shall see, different researchers concentrate more on some of these concerns than on others. The focus on cultural (or collective) vs. individual knowledge distinguishes cognitive anthropology from cognitive psychology, though, obviously, the one builds on the other and the line between the two can be subtle.

The stuff of cognitive anthropology is the stuff of human societies and cultures, and thus ultimately entails all the complexity that human groups can embody. And, to remind us of the obvious academic disciplines are human groups with specific social organizations and with specific shared and distributed cognitive systems. As anthropologists

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(or linguists or cognitive scientists) we are no different from the people we study or model; we have no privileged position beyond the power of the theories and models that we create to account for target phenomena. At the same time, as maybe particularly curious and rigorous people, we are in a position to call on all of the folk wisdom and folk insights that have been produced by our various cultural histories and by our interpersonal experience. Thus, at one extreme, anthropology includes the interpretative approach that Thomas treats (Chapter 22), while, at the other, we get the complex models such as that of Schank and Abelson (1977; see discussion in Chapter 12). In another direction, we get the kind of careful delineation of cognitive differences across cultures (Ross and Medin, Chapter 19).

The Companion is organized in parts. Part I – a "how we got here and where we are" section – treats the history of cognitive anthropology, the role of cognition and linguistic thought in cognitive anthropology, and the nature and types of collective cognitive structures. In Chapter 1 Benjamin Blount provides a broad and insightful overview of the history of cognitive anthropology. Naomi Quinn, in Chapter 2, provides a more personal perspective on the history of the important strand to which she has been central. Chapter 3, by Jürg Wassmann and his colleagues, describes – in a rich analytic overview – the cognitive context of cognitive anthropology. Janet Keller (Chapter 4) provides an extensive coverage of scholarship in anthropology and related fields pertaining to the relationship, in a cultural context, between language and thought. In Chapter 5 Giovanni Bennardo and David Kronenfeld discuss the types and range of collective representations that are important to cognitive anthropology and related parts of linguistics. Part I concludes with Chapter 6, John Gatewood's use of three relatively prosaic topics to provide clear and insightful explication of what we mean by collective representations, and how these relate to personal knowledge.

Part II covers methodologies. In Chapter 7 Penn Handwerker leads off with data collection – not just the methods but also how to approach the enterprise. James Boster (Chapter 8) carefully examines the interpretation of data in cognitive anthropology, especially in contrast with cognitive psychology. Kateryna Maltseva and Roy D'Andrade, in Chapter 9, explore in depth the uses of one form of data (multi-item scales) and its analysis. Chapter 10, by Stephen Borgatti and Daniel Halgin, provides a very clear and understandable explanation of how consensus analysis works and what it can be used for. In Chapter 11 Benjamin Colby uses a discussion of narrative structures and their analysis to offer us, also, a neuroscience-based approach to mind and culture, including the role of narrative in these. And, finally, in Chapter 12 Michael Fischer and David Kronenfeld offer characterizations of a wide range of simulations, models, and simulation studies, with a view to showing the usefulness of these for enabling an experimental approach to the study of collective cognitive systems.

In Part III we turn to the cognitive structures of various specific domains. In Chapter 13 Dwight Read looks at the role of mathematic structure in the organization of cultural domains including Zapotec wedding ritual, kinship terminologies, "sidedness" in moiety systems, and so forth. F. K. L. Chit Hlaing focuses on the formal, mathematical analysis of kinterm systems in Chapter 14, relating the attributes of kinterms to the system by which they are defined, and while doing so provides a history of relevant kinship studies. Andrea Bender and Sieghard Beller (Chapter 15) tell us about the cognition of number systems, including their cognitive architecture, the mental and material tools needed of number representation and numerical operations,

and the implications those tools have for cognitive processes in general. Roy Ellen, in Chapter 16 gives us a rich and full treatment of indigenous knowledge systems, including work on ethnobiological systems, on taxonomies and taxonomic thinking including universals, on technology and its products, and on the psychology that underlies these (along with related questions of intracultural variation and transmission). In Chapter 17 E. N. Anderson provides a timely and insightful discussion of the role played by emotion in cognition; his discussion includes the role of emotions in motivation and the universality of emotions. In Chapter 18 Douglas White offers a network perspective on cognition and culture; he provides some key network definitions, illustrates how social groups and associated cognitive sharing (consensus) emerge from this perspective, and offers a way of discerning implicit social structures as well as stability and instability.

Part IV's chapters explore the relationship – both as it is and as it might become – of cognitive anthropology to other, neighboring disciplines. In Chapter 19 Norbert Ross and Douglas Medin offer an extensive and insightful discussion of the role of cognitive anthropology in cultural anthropology and cognitive science – both what the relationship has been and what it should be in the future, including what cognitive anthropology has to do, including both methods, concepts, and perspectives. Halvard Vike's Chapter 20 looks at the way in which cognitive approaches can contribute to our understanding of how power works in society, and considers how individual actors draw on their cultural knowledge in negotiating their lives and understanding the forces that impinge on them. In a related vein, Carol Mukhopadhyay (Chapter 21) uses a relatively personal perspective to look at cognitive anthropology's interactions with feminist theory. She looks at what that interaction has been (and has not been, given some substantial overlap of personnel), and explores what it might become. Next, in Chapter 22, Lynn Thomas considers the relationship between mainstream contemporary cultural anthropology (with its strong interpretivist orientation) and cognitive anthropology, especially as the field is evolving. Thomas notes significant, if under-recognized, relevance, but goes on to suggest ways of improving both relevance and salience. With Hidetada Shimizu's Chapter 23, we shift gears a bit and go on to a new format. Shimizu uses a particular set of interrelated research projects (with findings) to exemplify how cognitive anthropology can serve important educational purposes – and how work on education might help the rest of us out. Completing Part IV, Miriam Haidle in Chapter 24 considers the relationship between archaeology and cognitive studies, especially in regard to cultural issues. She looks at the history of cognitively oriented approaches and at core themes. Her coverage includes archaeological perspectives and insights regarding human cognitive evolution.

Our final section, Part V, consists of some extended examples of contemporary empirical research. We lead with Brian Hazlehurst's account in Chapter 25 of the distributed cognition that is involved in Swedish fishermen's understanding of sonar pictures; he frames that account in a comparison of two contrasting approaches to cognitive architecture: the Turing machine mind (TMM) and the distributed cognition mind (DCM), which latter, unlike the former, takes account of information embedded in their environments and of people's use of that information. Next, in Chapter 26, comes Giovanni Bennardo's explication of a Tongan foundational cultural model (radiality). His explication includes both a detailing of how the model works and an indication of the rich array of empirical work across a number of domains

on which his account is based; he explicitly roots his account in a particular modular view of human cognition. Victor de Munck (Chapter 27) describes the variety of methods and analytic perspectives he used to try to get at the contrasting understandings of romantic love in US and Lithuanian communities. These ranged from ethnographic interviews to a variety of insightful cognitive experiments. Linda Garro in Chapter 28 looks at the cognitive framework within which people process illness. She considers the role of narrative for understanding life in time, for ordering experience and constructing reality (including interpretations of illness events and their treatment), and does this via a small number of specific cases from a couple of different cultural communities. Finally, Robert Schrauf and Madelyn Iris (Chapter 29) offer us a description of whether older members of several contrasting ethnic communities have a coherent model (embodying a useful understanding) of Alzheimer's disease and contrastingly of non-Alzheimers's "age-associated memory impairment." They take us through the phases of their study and the methods used.

In any collection such as this numerous relevant topics are necessarily omitted. In the interest of giving readers a more complete and filled-out picture of cognitive anthropology it seems useful to briefly review some of what we were not able to include.

First are a variety of topics and approaches which are discussed in various chapters, but which get no full explication or separate treatment. Theories and assumptions concerning modularity of mind are treated extensively from one perspective by Giovanni Bennardo in Chapter 26, and more thinly elsewhere. But we were not able to include a focused consideration of the fuller range of modularity versions that one sees in the discipline.

Similarly, cultural models show up throughout the volume, but we were not able to have the overview of the history and range of cultural model treatments that we would have liked. And the same holds for systems of orientation, specifically Frames of Reference (FoR), that represent one of the most fertile and groundbreaking research areas in contemporary cognitive anthropology (see Senft 1997; Bennardo 2002; Levinson 2003; Levinson and Wilkins 2006). Closely intertwined with it is the cross-cultural research on gesture (McNeill 2000; Kita 2003; Kendon 2004).

Second, there are a variety of approaches that have not been covered, to which it's worth calling attention. These include:

- the classic ethnoscience approach of Goodenough, Lounsbury, Conklin, Frake, Metzger and Williams, and Wallace and Atkins;
- the psychological version of ethnoscience and early cognitive anthropology of Romney, D'Andrade, and their students;
- the decision-making approach developed by Christina Gladwin, Hugh Gladwin, Robert Randall, James Young, and Carol Mukhopadhyay;
- the study of indigenous knowledge systems, as exemplified in the work of Jean Lave;
- the interpretative version, as seen in the work, for example, of Maurice Block and Pascal Boyer.

Finally, there is kinship, a conceptual system that has been of great importance in the development of cognitive anthropology, and whose importance continues. Kinship is

brilliantly treated in Chapter 15 by F. K. L. Chit Hlaing from one perspective. But there exist several other important perspectives that are well worth mentioning:

- Sydney H. Gould's (2000) formal algebraic system, similar in some ways to the system of Dwight Read (discussed by Chit Hlaing), but based directly on the Ms and Fs that Chit Hlaing speaks of;
- Ian Keen's (1985) direct use of natural language categories and native speaker calculations;
- the Marking Theory approach of Per Hage (see 1997, 1999, 2001) based on the work of Joseph Greenberg and subsequently elaborated by Doug Jones (in press);
- the set of socially and linguistically oriented approaches brought together in Trautmann and Whiteley (in press), including Allen (1998).

Next, there exist several important topics and issues that we could not get this time, but might aim for in future editions. Theories of mind loom large in much cognitive work, whether cognitive anthropology, cognitive psychology, or cognitive science. The topic is alluded to in several of our chapters, but not ever focally addressed.

A related topic is the evolution of the capacity for culture. How did the human ability (and then propensity) to develop systems of collective knowledge emerge? What other species are relevant, and how? Are both language and culture products of the same evolutionary process or do they – and to what degree – represent separate developments?

Given that humans have the propensity to create and learn systems of collective knowledge, how does the propensity evince itself in the cognitive development of human children, and how does that propensity, combined with the experience of communities using such systems, show itself in the child's learning – construction or reconstruction – of the systems of culture and language. That is, some sense of the processes of child development seems important for cognitive anthropology.

A different kind of topical issue which we see running through our chapters but which is nowhere foregrounded is the contrast between top-down vs. bottom-up approaches to understanding cultural cognitive systems. The contrast is, in one sense, that between (1) creating models of whole systems or sub-systems and then assessing how well these account for observed empirical regularities (see Chapter 13 for examples) and (2) working up to a broader understanding through a cumulation of observed empirical findings in theoretically guided studies. The former approach can be seen in Edwin Hutchins's (1980, 1995; see Chapter 25) pathbreaking work while the latter can be seen in the careful and insightful studies of Douglas Medin and his colleagues (see Chapter 19). In a sense this contrast can be seen as one between a focus on systems themselves vs. a focus on attributes of pertinent systems (though nothing is ever quite that neat!).

We have not been able to include all of the sub-disciplinary interactions with cognitive anthropology that we would have liked. In particular, one important omission is applied anthropology. Important here is the effective, practical use that is made in it of methods, analytic tools, and theories from cognitive anthropology, as well as cognitive science and cognitive psychology. Important also are the insights that cognitive anthropology has gained from practical, applied work such as that in, for example, John Gatewood et al.'s (2006 and 2008) study of credit unions and Gatewood and Cameron's (2009) study of tourism in the Turks and Caicos Islands.

Similarly, it would have been useful to have a full and focused discussion of the relationship between cognitive anthropology and work in humanistic branches of anthropology. It seems that there exists a potential usefulness of both cognitive methods and theories for a number of kinds of humanistic studies, while well-drawn subjective or interpretative portrayals have always provided an important stimulus to the anthropological imagination. Lynn Thomas (Chapter 22) hints at what might be there, but his focus is elsewhere.

I began by saying that cognitive anthropology is a diverse field. The diversity can be seen in specific research goals, in theoretical perspectives and modes of attack, in data collection and analytic methods, and in the kinds of conclusions that are reached. It follows that there can exist no overview that will simply summarize it, or pull it all together. At the same time I suggested that behind this diversity are some consistent elements – including the idea that culture exists in minds and a concern with culturally shared and variable distributed complex cognitive systems. In the Afterword at the end of this collection I offer one particular view of how culture might look from a dynamic, distributed cognitive perspective. The Afterword represents no consensual bottom line, but it does represent the kind of perspective that we think can rejoin anthropology and cognitive studies, and make both better than they have been.

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PART I

History of Cognitive Anthropology; Nature and Types of Cultural Knowledge Structures

CHAPTER 1

A History of Cognitive Anthropology

B. G. Blount

Cognitive anthropology as a distinct area of inquiry is a relatively recent one, dating from the early 1960s. Antecedents exist, of course, even from the beginnings of anthropology in the mid-19th century, but focal questions on mental constructs and their underlying principles have appeared systematically only during the past 50 or so years. Aspects of the early history relevant to cognitive anthropology will be traced below, but some introductory comments are in order. An initial concern is to locate cognitive anthropology within the discipline of anthropology.

Introduction

Although cognitive anthropology is typically seen as one of the sub-fields of cultural anthropology, that placement has always been problematic. There are two related issues. One is the identification of cognitive anthropology as psychology. While there is a Society for Psychological Anthropology section of the American Anthropological Association, it is relatively small, reflecting the general disinterest or even antipathy of many cultural anthropologists to the discipline of psychology. There are historical grounds for those sentiments. In the late 19th century, anthropology was struggling to become an academic discipline in its own right, which meant independence from an already established psychology. Anthropology needed a perspective or orientation definitive of the discipline and differentiating it from psychology. The concept of culture emerged to play that role. It became the key concept of the discipline, and many, but certainly not all, anthropologists continue to see it in that way.

In addition to competition for departmental independence, anthropologists in the late 19th century were opposed to psychological theory as it was then practiced. Psychologists tended to view the mind as consisting of innate properties. Levels and types

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of mental activity were to be explained, through reductionism, as properties of the brain. By contrast, anthropologists saw knowledge as cultural, as socially based, and as mutable. From the beginnings of the discipline, cultural anthropologists were opposed to reductionism, opting instead for radical relativity and for societies with unique sets of traits, to be described ethnographically. The perspective came to be known as historical particularism. While that perspective is no longer in vogue, at least in those terms, opposition to reductionism has remained, and in fact appears to have become more steadfast.

Cognitive anthropologists have also been concerned with accurate ethnographic description, but in addition they have sought principles that underlie behavior. A search for underlying order within kinship systems has been a prime example. Cognitive anthropology is, in fact, reductionist in the sense that observable behavioral phenomena are recognized as expressions of more basic and fundamental underlying organizational order and principles. Differences in perspective between cultural anthropologists and cognitive anthropologists still center on reductionism, but that difference is emblematic of a broader academic issue, humanities versus science. Anthropologists sometimes claim that anthropology is both a humanity and a science (a classic statement is by Wolf 1964), but the two approaches are not equally weighted and valued within the discipline. A good argument can be made that, in terms of number of practitioners and dominant theoretical perspectives, anthropology has always been much more a humanistic than a scientific discipline. Historical factors drive much of the character of the discipline, especially through the idea that ethnography must be qualitative, but cultural relativism plays an even more significant role. At issue is how ethnographic data are to be interpreted, as will be discussed below. The pursuit of explanatory principles in cognitive anthropology differentiates it from cultural anthropology.

The place of cognitive anthropology within the discipline of anthropology, then, has been and remains problematic. The "fit" within cultural anthropology is forced, at best. Given its history and problem of "disciplinary place," it is perhaps not surprising that claims are sometimes heard that cognitive anthropology is moribund or even dead. An aim of the discussion here will be to present the counterclaim that cognitive anthropology is alive and well and that its place within anthropology lies within scientific anthropology, not within fine gradations of cultural anthropology.

A Brief History of the Culture Concept: Cognitive from the Outset

Given that cognition has not been a central topic of inquiry in anthropology, it is perhaps ironic that the first anthropological definition of culture was fundamentally cognitive. That definition was provided by E. B. Tylor, the first academic anthropologist, who was engaged in an intellectual competition for several decades in the 19th century to account for the "place" among humankind of recently "discovered" people of Africa, Asia, and the Americas (1865, 1871). Rather than viewing the people as sinners degraded from a state of grace, he argued that they had not advanced as far comparatively as European folk toward civilization. The concept of culture was a centerpiece of his argument. Culture, in his view, was an intellectual capacity of