Mind, Morality and Magic

Cognitive Science Approaches in Biblical Studies

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ACUMEN

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Chapter 1

THE COGNITIVE SCIENCE OF RELIGION:
A NEW ALTERNATIVE IN BIBLICAL STUDIES

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The academic discipline of biblical studies has traditionally been one that adopted pioneering methods and insights in the study of religious texts. In the 1970s and 1980s, feminist, literary, and social-scientific modes of criticism were introduced. Since then, the field has also been deeply influenced by postmodern thought. The array of methods emerging in the last quarter of the twentieth century has now been applied for a considerable time, demonstrating both its potential and its limitations. In the meantime a new, interdisciplinary field has emerged in religious studies, one that can also bring fresh insights to the study of biblical literature. Since the academic discipline of biblical studies can be seen "as both a past ancestor of and a present partner within religious studies" (J. Z. Smith 2009), it is only natural that new trends in religious studies have aroused the interest of biblical scholars. What is happening in religious studies carries potential relevance for biblical studies as well.

The contributors to this volume argue that the cognitive science of religion (CSR) provides a new alternative for biblical scholars seeking fresh insights into ancient texts, and into the religious beliefs and practices that shaped those texts. Some initial steps toward applying CSR to biblical and related materials have already been taken (see also Czachesz 2008a). In August 2002, a conference organized by Luther H. Martin at the University of Vermont assessed the implications of Whitehouse's modes theory (see below) for the historical study of religions (Whitehouse & Martin 2004). The following year, Luther Martin (2003) and István Czachesz (2003) suggested in programmatic essays that cognitive science can be applied fruitfully in the study of ancient religions and in biblical interpretation, respectively. In 2005, a pioneering workshop on "Body, Mind, and Society in Early Christianity" was organized by Risto Uro in Helsinki, in collaboration with Petri Luomanen and Ilkka Pyysiäinen, and the following year Czachesz and Tamás Biró arranged the "International Workshop on Religion and Cognition" in Groningen. The aim of the former workshop

was to initiate a dialogue between the more traditional social-scientific study of the Bible and CSR approaches. The 2006 workshop focused on change and continuity in religious traditions, with particular emphasis on biblical literature and ancient religions. The two edited volumes based on these workshops offer experimental and pioneering endeavors in enriching biblical studies with perspectives and insights from the research undertaken in CSR (Luomanen *et al.* 2007a; Czachesz & Biró 2011). Finally, a special issue of *Evangelische Theologie* featured four articles on cognitive approaches in New Testament exegesis in German—in particular, on innovation and social structures (Czachesz 2011b), ritual theories (Uro 2011b), moral emotions (Kazen 2011b), and counterintuitive Christological ideas (Theissen 2011).

Encouraged by the success of these workshops and related activities, the editors of this book took the initiative of establishing a program unit entitled "Mind, Society, and Tradition" within the context of the International Meeting of the Society of Biblical Literature. During its two three-year terms (2007–12), the program unit was successful in offering an open forum for a number of biblical scholars interested in cognitive approaches to develop their ideas and comment on each other's research.[1] Scholars outside the sphere of biblical studies, including researchers representing various cognitive and evolutionary approaches, were invited as well. The present volume is the outcome of the work undertaken in this SBL program unit.

COGNITIVE SCIENCE OF RELIGION FOR DUMMIES

In spite of this rising interest, most biblical scholars are probably still unfamiliar with developments and findings in CSR. What is this new field all about? Why should a biblical scholar be interested in it?

To give a brief answer to the first question: the cognitive science of religion is a multidisciplinary and cross-disciplinary research program that seeks to explain religious beliefs and practices by utilizing the knowledge achieved in various fields studying the human mind. Rather than interpreting cultural particulars or local theological meanings in their immediate contexts, CSR is interested in recurrent patterns in religious thought and behavior and in cognitive structures that constrain religious phenomena across time and space. While CSR does not underestimate explanations that work at the level of social groups or cultural contexts, its primary focus is on the cognitive mechanisms that produce various mental representations

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1. From 2012 onward, the SBL Annual Meeting program unit "Mind, Society, and Religion in the Biblical World" has offered a forum for developing cognitive approaches in the study of biblical materials.

and thus constitute the basis of social behavior and cultural patterns typical of modern humans ("modern" refers here to anatomically modern humans, who developed cognitive capacities similar to ours some 50,000–100,000 years ago; see Coolidge & Wynn 2009). Thus, for example, CSR argues that people do not behave socially in the first instance because they happen to be born into social groups, but because the human species has developed a special capacity for the basic types of social behavior that can be found in all human societies (Boyer 2002b; Atran 2002). It is in this fundamental sense that the mind plays a crucial role in the explanation of human practice and thought. This, however, does not mean that social and cultural institutions have in no way influenced human evolution (Richerson & Boyd 2005) or that social and cognitive theorizing cannot or should not be combined (see especially Chapters 14–15 in this volume). Some cognitive scholars have envisioned an approach based on "explanatory pluralism," which would "enable scientists working at one analytical level to exploit the conceptual, theoretical, methodological and evidential resources available at another" (McCauley & Bechtel 2001). CSR is an ambitious project that attempts to synthesize our knowledge concerning human cognition, hugely grown in recent decades, bringing it to bear on the question of why religious thought and behavior is so common in humans and why religious life and thought take on the features they do (J. L. Barrett 2007). This knowledge can then be combined with findings in other fields, such as sociology and anthropology of religion.

The pioneering studies of the 1990s, which laid the basis for what later came to be called CSR, attempted to explain how religious rituals are mentally represented in the minds of the participants (Lawson & McCauley 1990; further developed in McCauley & Lawson 2002) and how religious (counterintuitive) concepts are culturally transmitted (Boyer 1994a). The model of "modes of religiosity" developed by Harvey Whitehouse introduced memory studies into the field and provided another perspective for the analysis of religious rituals (Whitehouse 1995, 2000, 2004a). Whitehouse argues that all religious traditions tend to develop either toward large-scale organizations, characterized by orthodoxy and dry ritual routine (the doctrinal mode), or toward small-scale communities, with an emphasis on emotionally arousing rituals (the imagistic mode). Cultural variation and transmission, which are central issues in the work of both Boyer and Whitehouse, have been studied by researchers in a number of cognate fields. Richard Dawkins's theory of *memes* is probably the best-known example of this research area (Dawkins [1976] 2006, 2004). Many CSR scholars have been inspired by Dan Sperber's theory of the "epidemiology of representations," which offers a different model for the spread of cultural beliefs (Sperber 1996, 2006). Alternative theories of cultural transmission and selection have been proposed by Peter J. Richerson and Robert Boyd (2005), as well as by Eva Jablonka and Marion Lamb (2005, esp.

193–242 and 285–317). Explanations drawing on evolutionary psychol-
ogy and evolutionary anthropology have also become part of the research
field (Boyer 2002b; Atran 2002), although some cognitive scholars regard
explanations derived from such research as a secondary project rather than
as an intrinsic or necessary part of CSR (J. L. Barrett 2007). It should be
noted, however, that the evolutionary perspective can be applied fruitfully
in a number of different ways in the study of religion and in biblical studies
(see especially Chapter 12 in this volume).

Why, then, should the biblical scholar pay attention to this recent branch
of religious studies? Biblical scholars have after all been primarily interested
in the *particular* historical and cultural contexts in which the biblical texts
can be located. From such a perspective, the "sweeping" models offered by
cognitive scientists may appear irrelevant or uninformative for the study
of biblical and cognate texts. There is no reason, however, to postulate a
sharp contrast between such generalizing models and explanations based
on the detailed study of ancient sources and their cultural contexts. Social-
scientific theory has been applied in biblical studies, with success, for sev-
eral decades. While social-scientifically oriented biblical scholars strongly
emphasize the salience of cultural contexts in the interpretation of biblical
texts and sometimes even show a bias toward cultural relativism, one of
the basic postulates of social-science criticism has been that *cross-cultural*
and testable models are powerful tools for explaining and understanding
biblical texts and societies (or persons; see Craffert 2008). Some theories or
areas of study applied in social-scientific biblical criticism demonstrate this
particularly well; these include studies dealing with social networks (Duling
1999, 2000, 2002), with altered states of consciousness (Pilch 2002; Craffert
2010), or with issues of purity and impurity (Neyrey 1986a, 1986b; R. H.
Williams 2010), social identity (Esler 1998, 2003; Luomanen *et al.* 2007a)
and memory (see below). All these approaches rely heavily on models that
are cross-cultural and that assume regularities in the behavior of human
beings across time and space. Thus, the history of biblical exegesis shows
that culturally oriented interpretations and generic models can be mutually
complementary rather than exclusive.

Moreover, the study of ancient *religions* (Judaism, Christianity, Ancient
Near East and Greco-Roman religions) has always been an important part
of the work of biblical scholars. Traditionally, ancient religions have been
studied by means of textual and philological analysis; more recently, how-
ever, other approaches, derived for example from archaeology, psychology,
anthropology, and the social sciences in general, have played an increasing
role. These developments are in line with the approaches of the modern
academic study of religion, which is significantly more than just the read-
ing and interpretation of theological texts. According to Armin Geertz,
"the study of religion is a theoretical project, exploring the academic
construction called 'religion,' which is informed by empirical evidence

perceived in terms of a whole range of ideas and assumptions" (Geertz 2008: 355). If a scholar is interested in explaining and understanding the religious *phenomena* reflected in the texts and other sources, recent theories of religion, including cognitive theories, become pertinent to biblical scholarship. The phenomena studied in the field of religious studies are of course manifold, and the topics and themes discussed in this volume are far from exhaustive. Many of these themes—such as the transmission of religious traditions, ritual behavior, magical practices, and ethics—have nevertheless been central issues in traditional biblical studies as well. In what follows, we elaborate upon the themes of the volume against the backdrop of recent developments in CSR, highlighting ways in which cognitive approaches can contribute to the issues discussed in biblical studies and give rise to new, potentially fruitful research questions. The volume relies on a broader understanding of CSR, including evolutionary considerations, and discusses the relevance of CSR research for biblical studies in a number of areas. The volume is divided into three parts: Memory and the Transmission of Biblical Traditions (Part I), Ritual and Magic (Part II), and Altruism, Morality, and Cooperation (Part III).

RITUAL, MEMORY, AND MAGIC

Recent years have witnessed a significant rise of interest in ritual among biblical scholars. This is not, of course, something entirely new in biblical studies. The German "history of religions" school in the late nineteenth and early twentieth century was deeply engaged in comparing early Jewish and Christian practices with those of the other religions of the biblical world. Yet the excitement over rituals soon gave way to other interests, and even the emergence of social-scientific approaches from the 1970s onwards did not at first give rise to studies focusing specifically on ritual aspects of biblical religions. More recently the tide has turned, at first in the study of the Hebrew Bible and the Ancient Near East (e.g., Milgrom 1991, 2000b; Olyan 2000; Gruenwald 2003; Gane 2004; Klingbeil 1998, 2007), and a little later in the study of the New Testament and early Christianity (Strecker 1999; DeMaris 2008; Taussig 2009; Uro 2010). The common thread of the recent discussion has been to ask how ritual theorizing can contribute to our understanding and explanation of ancient Judaism and the emergence of early Christianity. One driving force here is the fact that over the past decades ritual studies have developed into an independent academic field within religious and cultural studies (Grimes 1985, 1990; Bell 1992, 1997; Kreinath *et al.* 2008).

As noted above, cognitive scholars of religion were active from an early stage in advancing theories of ritual, theories which have been recognized by other ritual theorists as well (Bell 2005). Accordingly, ritual plays an

important role in several chapters in this volume. We are not arguing that cognitive theories of ritual should replace other modes of theorizing in the analysis of early Judaism and early Christianity. However, we do believe that cognitive theorists have paid attention to important explanatory factors behind ritual behavior which have been ignored or not fully explored in traditional approaches (Czachesz 2010a; Uro 2007, 2010, 2011a, 2011b, 2011d).

Memory and transmission

One such factor, receiving relatively little attention from ritual theorists before the introduction of Whitehouse's modes theory, is memory. In Whitehouse's model memory is crucial, since he argues that the two modes of religiosity are based on the encoding of religious traditions into two distinct memory systems: episodic memory in the imagistic mode and semantic memory in the doctrinal. Psychologists have distinguished between these two memory systems since the 1970s: episodic memories record specific events of our life (e.g., "yesterday I flew from London to Helsinki"), whereas semantic memories are lexical items without reference to singular events in our lives (e.g., "Helsinki is the capital of Finland"). Whitehouse's theory has inspired much discussion among scholars of religion and anthropologists (e.g., Whitehouse & Martin 2004; Whitehouse & Laidlaw 2004; Whitehouse & McCauley 2005; Uro 2007), and the memory factor has been integrated into other cognitive theories of ritual (especially in McCauley & Lawson 2002).

Memory was, of course, not an entirely new subject for biblical scholars. Understanding the transmission and development of early Christian teachings and texts is one of the traditional focal points of biblical scholarship. The importance of memory in oral transmission has been recognized by New Testament scholars, at least since the emergence of form criticism in the 1930s. Meanwhile, memory approaches gained currency in other fields of religious and cultural studies, and biblical scholars have been eager to apply perspectives from memory studies to their materials. Much of this research has focused on the theory of social or collective memory advanced by the French sociologist Maurice Halbwachs (1980, 1992; for an application to biblical materials, see, e.g., Kirk & Thatcher 2005a; Horsley *et al.* 2006; Thatcher 2008; Kelber & Byrskog 2009), but some biblical scholars have been interested in the cognitive aspects of memory as well (e.g., Kirk 2010).

Various cognitive models can be applied allowing new advances on this front, but two examples will suffice to demonstrate our point. First, cognitive models of the structure and transmission of oral traditions help us to better understand the development and textual features of biblical

literature (e.g., Czachesz 2003, 2010b; Uro 2011c). Second, epidemiology and the theory of minimal counterintuitiveness shed light on selective processes in the transmission of ideas and the formation of successful theological concepts (Czachesz 2007c; 2007d). Both issues will be further discussed in Chapters 3–7.

Several of the contributors to this volume draw insights from memory research (Part I). Luomanen presents a detailed survey of the memory perspective in biblical studies (Chapter 3). Drawing on recent research on both cultural and cognitive memory, Luomanen critically evaluates one relatively popular model used by biblical scholars, which emphasizes the faithful transmission of the autobiographical memories of the first followers of Jesus. Similarly to the approach of "explanatory pluralism" (see above), Luomanen underscores the need to combine cognitive and cultural perspectives in the study of early Christian traditions. He suggests further that Alan Baddeley's model of working memory can solve some of the problems raised by previous approaches. Chapter 4 by Czachesz continues the discussion of memory studies, focussing on the cognitive constraints of textual transmission, both in oral and literate forms. Following a brief introduction to the neurological and anatomical basis of memory, the chapter surveys schema theory and David Rubin's model of serial recall, offering examples of their use in the analysis of biblical passages. The chapter concludes by a discussion of the selective processes in transmission related to counterintuitiveness and emotional arousal.

In Chapter 5, Uro raises the issue of the impact of writing, as a form of external memory storage, on the mode of religious transmission, and examines the interaction between ritual and writing in the transmission of early Christian traditions—an issue that has only rarely been discussed in Early Christian studies. Elaborating on models introduced in previous publications (Czachesz 2007a, 2007e), Czachesz and Lisdorf use agent-based computational modeling to study the transmission of religious ideas (Chapter 6). Following a brief introduction to computer modeling, they present examples of how social and cognitive aspects of biblical religions can be modeled. Finally, in their case study they present a model simulating the spread of cultural practices or ideas, based on three variables: population density, mobility, and the memorability of the cultural item. The model compares the dissemination of Christianity and Mithraism in urban and rural environments. Chapters 5–6 thus demonstrate that ecological factors (such as population density) or technologies of communication (ancient manuscripts) can be fruitfully combined with considerations of cognitive constraints.

Gabriel Levy (Chapter 7) addresses the question of interaction between language and cognition in the development of religious beliefs, proceeding from Andy Clark's idea that both objects in the environment and spoken words are material symbols that enable humans to "offload" cognitive

content and thereby boost cognitive performance. More specifically, Levy examines the role of spoken and written biblical names as material symbols and their implications for the development of the concept of the divine.

Ritual and magic

Cognitive theorists have also focused on the mental representations of ritual actions (Lawson and McCauley in particular)*.* The analysis of rituals as *actions,* sometimes called the "action paradigm," has been much less popular in ritual studies than approaches emphasizing rituals as communication (Humprey & Laidlaw 1994; Laidlaw & Humprey 2008; Uro 2011a). Without rejecting the view that by performing rituals people are communicating with each other (for example by sending signals of commitment; see Chapter 12), we can recognize that many rituals can be parsed in terms of the linguistic structure of an action, consisting of an agent, an action (instrument), and a patient: someone is doing something to someone (by means of something). As McCauley and Lawson put it, "ritual drummers ritually beating ritual drums are still drummers beating drums" (McCauley & Lawson 2002: 10). According to McCauley and Lawson, a ritual can be called religious if one of the basic components of the ritual action is associated with a "culturally postulated superhuman agent" (CPS agent). McCauley and Lawson further suggest two kinds of ritual profiles: one in which CPS agents are ritually connected with the agent of a ritual (hence "special agent rituals") and one in which they are connected with the ritual elements fulfilling one of the other action roles, that is, instrument or patient (hence "special instrument" or "special patient rituals"). This distinction constitutes what they call the principle of superhuman agency. They also suggest another principle, that of superhuman immediacy, which has to do with the structural depth of a ritual. They point out that rituals often have enabling rituals or actions that need to be performed before the given ritual can be correctly performed. A minister can baptize a child because he has been ordained by a bishop, and the bishop can ordain a minister because he himself has received ordination. McCauley and Lawson argue that the number of enabling rituals required to connect some element in the current ritual with an entry for a CPS agent determines that entry's proximity to the current ritual.

With their model, McCauley and Lawson believe that they can provide fairly accurate predictions concerning the properties of a ritual in any religious tradition. They claim that they can predict whether a ritual is reversible, whether it is repeatable, and how much sensory pageantry or sensory stimulation is associated with any given ritual. The model, for example, predicts that special agent rituals are often central in religious systems and cannot be repeated, that elevated levels of sensory arousal

become associated with special agent rituals, and that a balanced ritual system includes rituals from both profiles (special agent rituals and special patient/instrument rituals).

Is it possible to capture so many features of religious rituals without appealing to cultural/historical particulars or social functions? Preliminary testing (Malley & Barrett 2003) indicates that people coming from different religious backgrounds show intuitions that are consistent with the theory's predictions concerning repeatability, reversibility, and so forth; but the study also gives evidence that the subjects of the experiment had problems in being able to conclude that a ritual implicated a superhuman agent. These results point to the conclusion that McCauley and Lawson have discovered something important with their theory, but that the theory is in need of modification or improvement. In particular Jewish ritual practices pose a challenge to the theory.

In Chapter 8, Tamás Biró focuses specifically on this challenge posed by the Jewish ritual system for the McCauley–Lawson theory. By placing the theory back in its original linguistic context, namely Chomsky's generative syntax model from the 1980s, Biró opens up a path for developing the theory in a new direction. In its present form the theory is unable to represent Jewish religious practice as described in the classic rabbinic literature, since the latter does not recognize either special agent rituals or enabling rituals by means of which to measure the structural depth of a given ritual. Jutta Jokiranta (Chapter 9) in turn examines the Qumran material in view of both McCauley and Lawson's and Whitehouse's theories, tackling similar questions to Biró. The ritual system of the Qumran movement seems to have been full of frequently repeated rituals. Did this kind of ritual system lead to a tedium effect or to a need to energize the members of the movement by means of special agent rituals, as predicted by the cognitive theories? Jokiranta suggests that the initiation and covenant renewal ceremonies in Qumran seem to have certain properties that can be attached to special agent rituals, even though the sources are not explicit about this. These two critical assessments of McCauley and Lawson's theory underline the fact that in the process of being tested against empirical evidence, a scientific theory can be productive of further work and can open up new research questions and modifications.

Approaches that emphasize rituals as *actions* prompt the problem of ritual efficacy, since actions often have effects (Sax *et al.* 2010). The question of ritual efficacy comes close to the scholarly discussion on "magic." Despite its long history in the study of religion, in which it has often been contrasted with religion and science, at some point magic was condemned as a pejorative and ethnocentric term, detrimental rather than helpful to the academic study of religion. More recently, however, a number of scholars have sought to develop it into an analytical conceptual tool for understanding both ancient and modern ritual practices directed

at producing desirable effects (e.g., Graf 1997; Braarvig 1999; Thomassen 1999; Pyysiäinen 2004b; Sørensen 2007; Czachesz 2007f, 2011a; Uro 2011a: 495–7). In Chapter 10 of this volume, Czachesz shows how findings from cognitive science and experimental psychology can shed light on early Christian evidence concerning magic. In particular, he suggests that magical practices and miracle stories go hand in hand, mutually confirming and motivating each other; both draw on subconscious processes of superstitious conditioning and implicit magical reasoning. These fundamental layers are augmented by explicit theological explanations, making use of available notions of supernatural beings and institutional frameworks.

A famous typology of "sympathetic magic," still influential in the present-day discussion, was advanced by James Frazer in *The Golden Bough* (1911: 11–49). According to Frazer, sympathetic magic is grounded in two universal laws of thought. The first is the law of similarity, which is based on the assumption that like produces like (or that an effect resembles its cause). The second is the law of contact or contagion, according to which things which have once been contact with each other continue to influence each other at a distance after the physical contact has been severed. In Chapter 11, Uro examines two striking examples of the law of contagion from early Judaism and early Christianity: the idea of corpse impurity and the idea of positive contagion in the cult of the saints. Both the gradual decline of Jewish purity rules as to corpse impurity and the rise of relic veneration during the first centuries of Christianity would seem to indicate that ideas about dead bodies are "social constructions," resulting from cultural manipulation of the endlessly malleable human mind. Yet cross-cultural ethnographies, psychological experiments, and evolutionary-psychological reasoning all provide evidence that various cultural practices related to dead bodies and ideas of contagion share certain fundamental cognitive regularities.

ALTRUISM, MORALITY, AND COOPERATION

It has been long observed that a link exists between morality and religion, yet only now are we beginning to understand the precise nature of this link. Do humans behave morally because they are religious? Or did morality come first and create a belief in moral gods? Cognitive research on cooperation, altruism, moral emotions, and moral reasoning has direct implications for understanding how religion is connected to behavior and moral decisions. Humans are social animals, and various moral intuitions are believed to be innate to the human mind. Understanding other people's thoughts and feelings, cooperating with others to achieve common goals, and detecting and punishing cheaters are challenges shared in by all human beings, throughout our history and prehistory. Our evolutionary past is thus likely to have equipped us with capacities for elementary social

cognition, such as imitation, joint attention, and joint action, as well as with higher social abilities, such as empathy, altruism, and cheater detection (Frith & Frith 2007, 2008; C. D. Frith 2008).

Theorists of religion and morality have followed two alternative paths. According to Pascal Boyer (Boyer 2002b: 192–231), moral intuitions that originally developed to safeguard cooperation later led to beliefs in moral gods, with full access to socially strategic information (such as people's social status, past actions, and future intentions). Such a view of God is reflected in the biblical literature: God examines people's "kidneys" and sees their evil or good plans (e.g., Pss 7:9; 51:6; Jer. 17:10; Rev. 2:23). Rather than asking about the contribution of social cognition to beliefs in morally interested superhuman agents, some scholars argue for the constitutive role of religion in the evolution of humankind. In many ways, this approach shows basic similarities to the view of Émile Durkheim, who regarded religion as a social glue—an idea that was in turn influenced by the general sentiment of Protestant liberal theology in the nineteenth century. Contemporary evolutionary studies of religion, however, go beyond arguing for the role of religion in human society, and examine the specific mechanisms that enable religion to fulfil an adaptive role and benefit human groups. For example, David Sloan Wilson (together with Edward O. Wilson) developed a theory of multi-level selection (Wilson & Wilson 2008), where competition between groups can overrule evolutionary pressures that influence selection at the level of the individual. More specifically, David Wilson (2003, 2009) argued that religion plays a crucial role in selection among competing groups (known as the principle of "group selection"). In order to understand what is at stake in evolutionary theories of altruism and cooperation, let us take a closer look at these two concepts.

Altruism is frequently referred to in contemporary discussions of morality, yet the exact meaning of the term often remains unclear. From the point of view of evolutionary theory, altruistic behavior results in increasing the fitness of others while not enhancing the fitness of the individual. Two types of altruism have been successfully accounted for in a strictly evolutionary framework (Stone *et al.* 2006: 224–7; Simpson & Beckes 2010). In terms of the theory of *kin selection*, formulated by W. D. Hamilton (1964a, 1964b), altruistic behavior toward blood relatives is adaptive because we share a great proportion of our genes with our kin (e.g., fifty percent with a child or sibling). Especially behavior that benefits several members of our kinship simultaneously can in fact increase the chance that our genes will get passed on. *Reciprocal altruism*, as defined by Robert L. Trivers (1971), predicts that two organisms will behave altruistically if they can expect such behavior to be reciprocated in future. If this is indeed the case, the genes which underlie reciprocal altruism will be passed on and selected for in evolution. Reciprocal altruism can take place among friends in human society, but also between members of different species. There is a range of

altruistic behaviors, however, which arguably cannot be explained in terms of one of these widely accepted theories. Some people, for example, are willing to risk their own lives to save a complete stranger from drowning, even though it neither increases the chance of passing on their own genes nor increases the chance that they themselves will be pulled out of the water at some future time.

Cooperation is a different but closely related problem. Various mechanisms of social cognition enable us to act jointly in order to achieve shared goals (H. H. Clark 2006; Sebanz *et al.* 2006). In small groups, people can typically keep account of each other's investments in joint efforts and can detect cheaters. Large-scale, anonymous groups, on the other hand, are in constant danger of being exploited by free-riders, who reap the benefits of cooperative efforts without (fairly) contributing to the costs. The punishment of free-riders seemingly cures the problem. But punishing someone might be costly for the individual who detects cheating, demanding the investment of extra time, energy, or material resources. The solution to this problem is the punishment of individuals who fail to punish; but this obviously merely shifts the problem to the next level.

The third part of the book, dedicated to issues of altruism, cooperation, and religion, looks at these puzzles of human sociality, as they are manifested in biblical religions, from the perspective of evolutionary theory and cognitive science. Joseph Bulbulia (2004a, 2008, in press) previously developed an important hypothesis, according to which emotional commitment to religious concepts supports cooperation and solves the free-rider problem. In their contribution to this volume (Chapter 12), Bulbulia *et al.* start from the dominant evolutionary model of religion. The recent discussion has centered on the commitment (costly) signalling theory, which argues that the evolutionary benefit of religion is associated with the hard-to-fake nature of religious commitments promoting cooperation. Since this perspective can only be applied to small-scale societies, Bulbulia *et al.* advance a new "charismatic signalling" model, which explains how religious *cultures* address the problem of risk. The authors also put forward suggestions as to how such evolution-inspired (and cognitive) theories can be applied in the historical study of religion.

A recent wave of evolutionary studies of emotion has argued that emotions actually play a more significant role in moral decisions and behavior than was believed a few decades ago. In general, it was cognitive scientists who began to appreciate the tremendous role that emotions play in human cognition (A. R. Damasio 1994). This applies in particular to moral reasoning, at the core of which we find the mechanism of empathy. In Chapter 13, Thomas Kazen explores the evolutionary roots of human empathy, and suggests the potential role these insights can play in arriving at a better understanding of various biblical traditions of protecting the weak, such as immigrants, orphans, and widows.

Rikard Roitto approaches the Epistle to the Ephesians from the point of view of social cognition and proceeds from social identity theory to analyze the construction of the prototypical group member in the community to which the Epistle was addressed (Chapter 14). Relying on this socio-cognitive perspective, Roitto is able to pinpoint several issues in the letter's argumentation which previous studies of Ephesians have had difficulties articulating: for example, how the author of the letter, without creating a consistent argument leading from theology to practical norms, nevertheless has the rhetorical power to induce the perception that the norms in the letter were normative for the recipients.

The third part of the volume concludes with the contribution by Colleen Shantz (Chapter 15), who considers the role of emotion in establishing and maintaining group boundaries. Shantz relies on neuroscientific research concerning religious experiences and on evolutionary theorizing about morality (particularly by Jonathan Haidt), in an attempt to understand how Paul could successfully mitigate the powerful emotions that reinforced social and ethnic distinctions.

Finally, let us note that the question of morality and religion is often connected to the issue of whether religion is an adaptation or a by-product of human evolution (cf. Murray & Schloss 2009; Pyysiäinen & Hauser 2010). In this volume, however, we keep these two questions separate, especially because the adaptive (or neutral, or non-adaptive) role of religion (or of its various elements) in human evolution is not directly relevant to the application of a cognitive perspective to biblical materials. It is also important to remind ourselves that arguments for or against the adaptive nature of religion do not validate or falsify the truth-claims of religious beliefs; thus the debate does not provide arguments for adopting or rejecting cognitive approaches by scholars working from religious or secular perspectives, respectively (Czachesz 2010c).

CONCLUDING REMARKS

After working through the chapters in the three parts of this volume, readers may possibly be puzzled by the diversity of methods, agendas, and hypotheses suggested by the authors. Indeed, the cognitive approach to biblical literature reflects the multi-disciplinary nature of CSR, as of cognitive science in general. Empirical laboratory research, anthropological fieldwork, philosophical reflection, and the close reading of religious sources can be equally meaningful methods in a cognitive approach to biblical religions. What connects these variegated studies is an interest in the human cognitive capacities that we share with people living in biblical times, and an appreciation and utilization of the scientific tradition that studies the minds and brains hosting these cognitive structures. In this

book, we do not intend to advocate a particular scientific view of cognition, or draw a particular conclusion as to the evolutionary role of religion, or arrive at a shared understanding of biblical religions in general. Indeed, our foremost goal is to convince the reader of the importance, validity, and necessity of asking the kinds of questions we are asking, which is even more important than persuading the reader of the truth of the particular answers to those questions offered by the contributors to this volume. It goes without saying that one volume cannot exhaust the full spectrum of possible applications of cognitive science to understanding biblical religions. In fact, ongoing work in the "Mind, Society, and Religion in the Biblical World" program unit (Society of Biblical Literature), as well as in other venues, addresses additional aspects of biblical religions, such as the problem of the origins and use of texts and the formation of religious canons (cf. Czachesz & Theissen forthcoming).

Our goal is to present a new perspective in biblical studies, and to invite the reader to become involved in the developing and fascinating discussion about the cognitive and evolutionary roots of human religious thought and behavior. We very much hope that this volume will help to make cognitive approaches an accepted part of the toolkit of biblical scholarship.