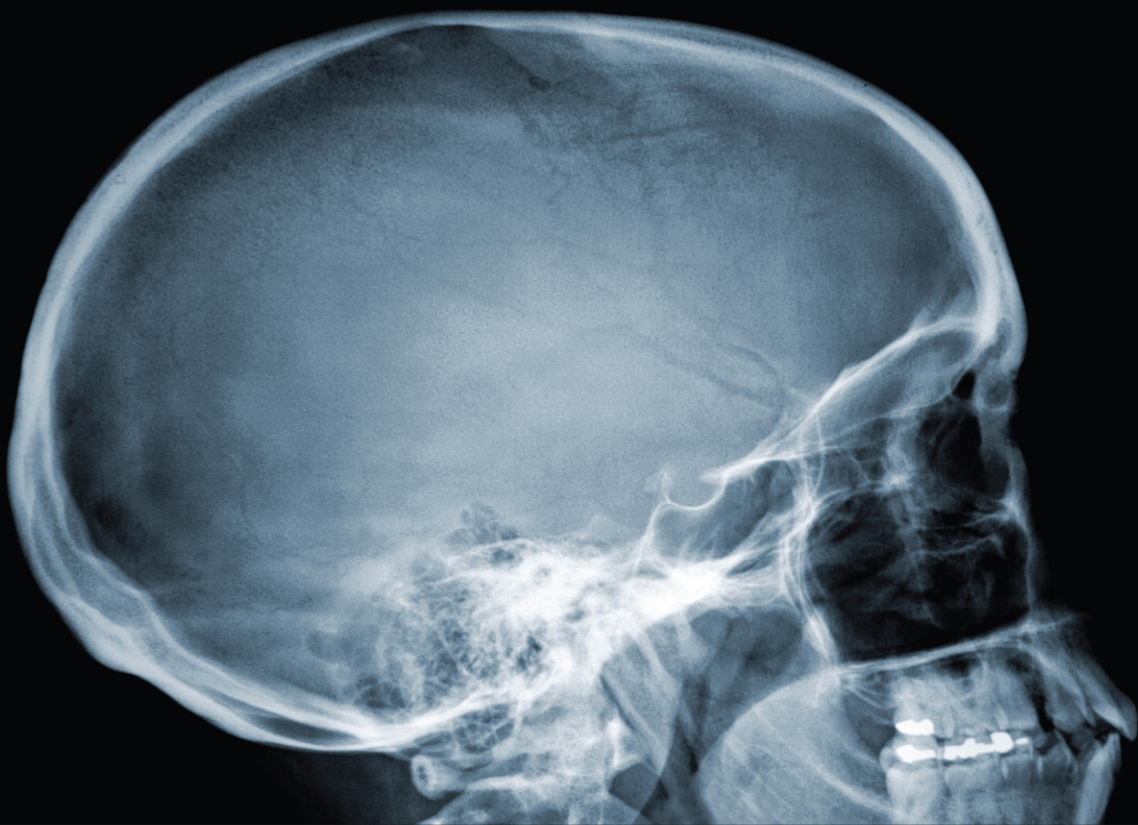




RELIGION AND COGNITION

A READER

Edited by **D. Jason Slone**



CRITICAL CATEGORIES IN THE STUDY OF RELIGION

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RELIGION AND COGNITION

Religion and Cognition brings together the key essays which explore the mental processes which govern religious belief and behaviour across cultures and eras. The reader aims to introduce students to the basic framework of the cognitive science of religion as well as to the experimental methods and findings that support cognitive theories of religion.

The essays are scientific in nature and universal in scope. Together they address five central topics in the cognitive study of religion: meta-theoretical arguments for cognitive explanations of religion; theoretical models of cognition employed in the cognitive science of religion; prominent cognitive theories of religion; methods used to gather data and test theories; and experimental findings by cognitive scientists of religion.

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RELIGION AND COGNITION

Critical Categories in the Study of Religion

Series Editor: Russell T. McCutcheon, Associate Professor, Department of Religious Studies, University of Alabama

Critical Categories in the Study of Religion aims to present the pivotal articles that best represent the most important trends in how scholars have gone about the task of describing, interpreting, and explaining the position of religion in human life. The series focuses on the development of categories and the terminology of scholarship that make possible knowledge about human beliefs, behaviours, and institutions. Each volume in the series is intended as both an introductory survey of the issues that surround the use of various key terms as well as an opportunity for a thorough retooling of the concept under study, making clear to readers that the cognitive categories of scholarship are themselves historical artefacts that change over time.

RELIGION AND COGNITION

A Reader

Edited by
D. Jason Slone

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To Betty, Pauline, Irene, Kim, and Amber

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RELIGION AND COGNITION: AN INTRODUCTION

D. Jason Slone

This volume is designed to introduce readers to the cognitive science of religion through important papers, all but one (Chapter 13) of which have been published since 1990. The volume is divided into two parts. Part I contains four chapters that review the meta-theoretical and theoretical frameworks of the cognitive science of religion, and Part II contains nine chapters that introduce the reader to findings from experimental studies that support core hypotheses in the cognitive science of religion.

1. Part I

Meta-theoretical commitments of the cognitive science of religion are explored in Chapter 1, "Interpretation and Explanation: Problems and Promise in the Study of Religion," by E. Thomas Lawson and Robert N. McCauley. Lawson and McCauley argue that the study of religion is best approached from an *interactionist* meta-theoretical position that welcomes both interpretive and explanatory approaches. This is a change from typical studies of religion that only engage in interpretive, i.e. hermeneutic, endeavors. Hermeneuticists often argue that scientific studies of religion are reductionistic and insensitive to the personal and cultural meanings and values religions provide, and therefore that the job of the scholar of religion is to unpack what religions mean for their followers. On the other hand, explanatory exclusivists, such as the logical positivists in the philosophy of science, argue that interpretive endeavors are merely subjective, personal opinions, and therefore of little epistemological value other than to fulfill the particular curiosities of the scholars involved.

These two positions—hermeneutic and explanatory exclusivism—are in significant ways straw arguments, argue Lawson and McCauley. Explanations themselves require interpretive acts, and interpretations often function as explanations. The interactionist stance sees explanation and interpretation as complementary; they are different cognitive tasks. However, as readers will gather from Chapter 1, Lawson and McCauley argue that an imbalance currently exists in the study of religion because most scholars do exclusively interpretive work. The cognitive science of religion, while welcoming interpretive work, seeks to make explanatory contributions to our understanding of religion and in the process redress the imbalance.

So what exactly are the explanatory theories of the cognitive science of religion? To begin, most operate within the theoretical framework of “cultural epidemiology” outlined by Dan Sperber in Chapter 2. Sperber argues that explanation of widespread cultural forms (including but not limited to religion) must include cognitive considerations. For something to become a “cultural” representation, it must first originate in an individual’s mind and then spread to other people’s minds (often via material objects, like texts). Thus, a “cultural” representation is merely a private representation that has spread successfully to other members of a population.

Explaining why certain forms recur across populations therefore requires an approach much like viral epidemiology, connecting the “virus” (the mental representation that spreads across a population) with the hosts (the minds of individuals). Just as is the case with viruses, mental representations that fit well with hosts’ minds are more likely to be spread than ones that don’t. In this way, cognition can be said to constrain what kinds of mental representations become cultural forms. In turn, those types of cultural forms (e.g. religious systems) that recur across cultures can be said to be “fit” cultural forms; that is, they are fit for cognitive consumption. By extension, it is because human minds are basically the same across cultures that we see the same types of cultural forms recur across cultures.

So what is human cognition like such that religion is such a good fit for it? In Chapter 3, Lawrence Hirschfeld and Susan Gelman show that the human mind is domain-specific—a collection of various “modules” that perform specific tasks. Importantly, much of the information each module possesses is non-cultural, but rather part of the cognitive architecture itself. While there is no consensus among cognitive scientists on how many modules minds might possess, it is clear that these modules work together, creating various cognitive systems that allow us to make intuitive sense of the world and its workings. For example, we have a “folk physics” system that tells us (among other things) that solid objects cannot go through other solid objects (e.g. people can’t walk through walls). We have a “folk biology” system that tells us that babies resemble their birth parents (i.e. have the same parts/traits). And we have a “folk psychology” system that tells us other people’s

behaviors are goal-directed, i.e. driven by beliefs and desires (e.g. “Brenda puts on her coat because she believes it is cold outside and desires to stay warm”).

These domain-specific cognitive systems are triggered by environmental inputs. For example, when we see a person crying, the perception is likely to trigger the inference that that person is unhappy. When we see a puppy, the perception triggers the inference that the parents of the puppy are similar-looking dogs. When we see a moving object strike into another object, the perception triggers the inference that the object being hit will be launched. Therefore, human minds don’t just “soak up” the environment; environmental inputs trigger inferential representations about what is being perceived. The mind is neither a “blank slate” nor a “black box”; it is a domain-specific computational, representational, information processor.

This fact about minds leads to an important question, namely, where does this cognitive information come from? If it is not learned *per se*, is it innate? Does it develop early in the life span? Is it somehow both learned and developed? The matter itself is far from settled in the cognitive sciences, but the issue is largely immaterial for the study of religion because, regardless of whether these cognitive capacities are innate or develop, they are in place by the time human beings acquire religion from culture. In this way, cognition constrains what kinds of religions will be widespread. If the cultural inputs do not fit with cognition in specific ways, transmission is not likely to be very successful. And a survey of world religions reveals that “successful” religions (i.e. long-lived and/or widespread) possess recurrent patterns of belief and behavior, which can be connected to cognitive capacities that enable their transmission.

In this way, religion—again, at least in the form of religions found to recur across cultures and eras in human societies—can be said to be “natural”; religion is a natural fit for human cognitive consumption. This point is shown in Chapter 4, “Exploring the Natural Foundations of Religion,” by Justin Barrett. Barrett points out that, despite variation across and within religious systems, most religions involve a shared system of beliefs and actions concerning supernatural agency (i.e. gods, goddesses, demons, angels, ancestors, etc.). That is, religion involves the belief that supernatural agents exist, and a set of prescribed actions (i.e. rituals) for interacting with those agents.

Why do these features recur across cultures? In short, because of how the mind works. First, why do religions involve belief in supernatural agents? Religious conceptual schemes across the world are believed to be populated by supernatural agents because the mind is primed to detect agents in general. In fact, Barrett argues, the mind is so primed for detecting agents in the world that it is reasonable to say that the mind possesses a “hyperactive agency detection device” (HADD) that predisposes humans to detect agency at work in the world, even where perceptual data do not warrant such

representations. When you awaken in the middle of the night and hear a noise in your house, your HADD predisposes you to automatically generate the representation that an agent is in the house and has made the noise. You immediately think, “Is that a burglar?!” (even though it is probably just old floorboards creaking).

The belief in gods and other forms of supernatural agency is the extended application of this natural tendency, with one important difference. Supernatural agent concepts involve ordinary agent concepts (e.g. person, animal) with one or two violations of domain-specific expectations. In other words, gods are mostly like ordinary agents (e.g. they have minds with beliefs and desires) but with one or two “supernatural” capacities (e.g. their minds know everything). As Barrett notes, Pascal Boyer has shown that despite their apparent differences across cultures, most supernatural agent concepts are represented in this way; gods are “minimally counterintuitive” agents.

In turn, once people acquire these concepts of minimally counterintuitive agents, we then interact with those agents, employing the same cognitive system used for social interactions with ordinary agents. That is, religious rituals have the same representational structure as interactions with people, animals, plants, etc., with the only difference being one of the parties involved in the ritual action is (represented as) a minimally counterintuitive agent. In other words, religious rituals conform to the following pattern: Agent → Action → Patient. As a result, only three types of religious rituals are possible: rituals in which minimally counterintuitive agents are represented in the first slot (i.e. as the agent), in the second slot (i.e. in the action), and in the third slot (i.e. as the patient). In this way, religious actions are constrained by ordinary cognition as well as religious beliefs.

Barrett’s chapter clearly shows that despite its apparent “super-natural-ness,” religion can be shown to be a natural product of human cognition. Does this mean the same thing as saying humans are “hardwired” for religion? The answer is “no,” Deborah Kelemen explains in Chapter 5, “Are Children ‘Intuitive Theists’? Reasoning about Purpose and Design in Nature.” What humans do possess, however, are the cognitive prerequisites for acquiring religion.

In Chapter 5, Kelemen reviews a range of literature from developmental and cognitive psychology that suggests children can be viewed as “intuitive theists” in the sense that children develop cognitive capacities that are prerequisites for acquiring theism later.

What are these prerequisites? Kelemen cites three. First, children must develop the capacity to maintain a mental representation of a causal agent (despite its intangibility). Second, children must develop the ability to attribute mental states to that agent, thereby distinguishing it from more commonplace agents. Third, and most importantly, children must develop the basic ability to attribute design intentions to agents, and to understand an object’s

purpose as being derived from such intentions. Kelemen's literature review shows that children do, in fact, develop these capacities, which allows us to acquire religion.

2. Part II

Like all scientific claims, theories put forth by cognitive scientists of religion need support in order to be taken seriously. Historically, most non-cognitive scholars of religion have relied only on observational empirical support for their claims rather than experimental empirical support, as most scientists do. This is, again, likely because of those scholars' commitments to the meta-theoretical stance of hermeneutic exclusivism (noted in Chapter 1). While plausible, the "naturalness of religion thesis" that cognitive scientists have put forth would—and does—benefit from strong, supportive experimental evidence.

Generally speaking, experimental evidence provides more powerful support for scientific claims than passive observational support for the reason that experiments are controlled tests of potentially causal variables. In other words, experiments allow scientists to isolate variables that are postulated to be the causes of events. If test results fail to disconfirm a claim, those data are taken to be supportive of the claim (and vice versa). Furthermore, this systematic approach allows for a community of scientists to establish the credibility of experimental evidence. If similar results are obtained independently (e.g. by separate test runs, and/or replications by different scientists), this adds to the community's confidence in the claim.

Though only recently emerged, scholars working in the cognitive science of religion have produced a number of experimental studies that support core hypotheses in the field. The articles in Part II present some of those studies.

Chapter 6, "Conceptualizing a Nonnatural Entity: Anthropomorphism in God Concepts," explores the cognitive foundations of the phenomenon of anthropomorphism. As is widely known by students of world religions, the "tragedy of the theologian" is that lay people regularly distort (from the perspective of official theology) god concepts by anthropomorphizing them. The God of Christian theology, for example, is supposed to be (again, from the perspective of official theology) represented as an "essence," not a being, as "omnipresent," not as living in a single location, as "genderless," not as a man, etc. Yet it is common for Christians to represent God as "the big guy in the sky."

Using narrative comprehension and recall studies, in which subjects were told a story and then asked to recall its contents, Justin Barrett and Frank Keil demonstrated that subjects are more likely to (mis-)represent god concepts anthropomorphically than in a theologically correct way in real-time

problem-solving situations. Specifically, their studies show that when performing recall tasks that require inferential reasoning processes, people abandon memorized creeds and rely on more “natural” ways of representing gods. In this way, they argue, the specific phenomenon of anthropomorphism, and the more general phenomenon of “theological correctness” (holding ideas that differ from official theologies), are natural by-products of cognitive constraints.

Experimental support for Boyer’s “minimal counterintuitiveness” hypothesis is presented in Chapter 7, by Justin Barrett and Melanie Nyhof, and in Chapter 8, by Pascal Boyer and Charles Ramble. Both sets of experiments involve subjects being given concepts that varied in their levels of counterintuitiveness, from intuitive concepts (i.e. concepts that did not violate any domain-specific expectations; e.g. a man who could see right in front of him) to minimally counterintuitive concepts (i.e. concepts with single domain-expectation violations; e.g. a man who can see villages many miles away), and then recalling those concepts after some time had passed. In studies by both, subjects regularly recalled the minimally counterintuitive concepts better than the intuitive ones. The results obtained by Boyer and Ramble are especially important in this regard because they were obtained across different cultures—in France, Gabon, and Nepal. These findings eliminate the possibility that results obtained by Barrett and Keil were unique to the United States, and therefore are merely a product of culture.

In Chapter 9, “Ritual Intuitions: Cognitive Contributions to Judgments of Ritual Efficacy,” Barrett and Tom Lawson report results from tests of Lawson and McCauley’s “ritual form hypothesis” (reviewed by Barrett in Chapter 4). In these studies, these authors tested ritual participants’ judgments about features of ritual performance, such as ritual efficacy and the relative importance of a superhuman agent’s participation. In particular, Lawson and McCauley’s theory of ritual competence generates three predictions. (1) People with little or no knowledge of any given ritual system will have intuitions about the potential effectiveness of a ritual given minimal information about the structure of the ritual. (2) The representation of superhuman agency in the action structure will be considered the most important factor contributing to effectiveness. (3) Having an appropriate intentional agent initiate the action will be considered relatively more important than any specific action to be performed.

To test portions of these predictions, Barrett and Lawson constructed several artificial rituals (in order to avoid the confounding problem of background knowledge), manipulated several hypothetical scenarios in which the ritual performances were set, and then asked subjects to make judgments about the ritual scenarios. They found that subjects routinely made similar types of judgments about the ritual scenarios, even though they had no background knowledge about the rituals themselves (again, because the rituals

were artificially constructed for the purposes of the study) or of the purposes of the test. In other words, these data support Lawson and McCauley's claim that there are non-cultural regularities in how (ritual) actions are conceptualized, which inform and constrain participants' understandings of religious rituals.

The next three chapters, Chapters 10–12, present findings from developmental psychologists who have studied how children reason about religion. In Chapter 10, "Cognitive and Contextual Factors in the Emergence of Diverse Belief Systems: Creation versus Evolution," Margaret Evans reports on data obtained about how children from different backgrounds—those in fundamentalist and those in nonfundamentalist Christian homes—reason about the origins of natural species (i.e. children with "creationist" backgrounds versus those without). She found that pre-adolescent children (like their mothers) embraced the dominant beliefs of their community, whether creationist or evolutionist. However, five- to seven-year-olds in fundamentalist schools endorsed creationism, whereas nonfundamentalists endorsed mixed creationist and spontaneous generationist beliefs. Most interestingly, though, she found that eight- to ten-year-olds were exclusively creationist, regardless of community of origin.

Based on these results, Evans argues that the divergent developmental pattern her data reveal can be explained with a model of "constructive interactionism." Children generate intuitive beliefs about species' origins, both natural and intentional, while communities privilege certain beliefs and inhibit others—thus engendering diverse belief systems. Thus ideas transmitted culturally do not determine, entirely, what an individual thinks. Instead, individuals possess divergent belief systems as a result of cultural acquisition and cognitive inferences.

In Chapter 11, "Children's Attributions of Beliefs to Humans and God: Cross-Cultural Evidence," Nicola Knight, Paulo Sousa, Justin Barrett, and Scott Atran show that children across cultures reason about gods' minds—in particular, about what gods know—using their capacity to mind-read (called "theory of mind capacity" in developmental psychology). Knight et al. employed a commonly-used experimental technique, originally proposed by Daniel Dennett, to study how children understand how other agents' minds work. This technique, which has come to be called the "false belief test," involves (among other versions) showing children an ordinary container, such as a cracker box, and asking them what contents are inside. When given this task, most children say, "crackers." Then, the experimenter in the study opens the box and reveals that the box does not contain crackers, but rather surprising contents such as rocks. Then, the experimenter asks the child to infer what other agents, who don't have access to the information about what is actually inside the box, might think are in the box. For example, "If mommy came in the room right now, what would she think is in the box?"

Children's responses to this false-belief test follow a predictable pattern. Those under the age of four routinely fail the test, saying, "rocks." Those over the age of five routinely pass the test, saying, "crackers." Thus, a child's theory of mind capacity is not fully developed before the age of four, but is so after the age of five.

Knight et al. extended this study to the realm of religion, asking a sample of Yukatek Maya children (in order, like Boyer and Ramble [see Chapter 8], to obtain cross-cultural data) to perform the task, with the additional question of inferring what God might think was in the box. Interestingly, they found that children reasoned about God and other humans in the same way (i.e. same percentage saying God and other humans would think crackers were in the box) up until the age of five, at which point subjects stated that God would know that there were rocks in the box, whereas other humans would falsely think crackers were in the box. This suggests that five-year-olds—but not four-year-olds—understand the theologically correct version of God's mind versus human minds; God is omniscient, whereas humans are epistemically fallible.

In Chapter 12, "The Natural Emergence of Reasoning about the Afterlife as a Developmental Regularity," Jesse Bering and David Bjorklund show—as was shown by the Evans, and the Knight et al. studies—that children reason in religion in different ways depending on their stage of development. In this study, Bering and Bjorklund were interested in understanding how children reason about what happens after death. In particular, given the widespread belief across religious systems that a person's "soul" (or culturally equivalent) continues on after death even though the body dies, they were interested in whether or not people reason that biological functioning ceases at death but psychological functioning does not.

To test this, they told children ranging in ages from four to twelve years old versions of a story in which a mouse was eaten (and therefore killed) by an alligator. Then, they probed the children's death concepts by asking them questions about what was happening (if anything) to the biological and the psychological functioning of the dead mouse. They found that the youngest children were likely to state that both cognitive and psychobiological states continued at death, whereas the oldest children were more likely to state that only the cognitive states continued. Further, they found in subsequent studies that, like the older children, adults were likely to attribute psychological functioning to dead agents as well. These findings suggest that developmental mechanisms underlie intuitive accounts of dead agents' minds. That is, the older we get, the more likely we are to think that psychological functioning continues after death even though biological functioning stops.

Finally, in Chapter 13, "Modes of Research: Combining Cognitive Psychology and Anthropology through Whitehouse's Modes of Religiosity," Rebekah Richert presents findings that support Harvey Whitehouse's "modes

of religiosity” theory. The modes of religiosity theory is an account of ritual transmission that describes the existence of two distinct types of religious (ritual) traditions—“doctrinal” and “imagistic”—and attempts to explain this dichotomy (and its related social morphologies) in terms of cognitive processes.

The doctrinal mode of religiosity is characterized by rituals that are repeated frequently, low in emotional arousal, and usually accompanied by verbally transmitted exegesis. By frequently repeating rituals in this mode, the ritual procedures activate semantic memory systems, and make possible the transmission of explicit and complicated doctrinal teachings. The imagistic mode, by contrast, is characterized by rituals that are low in frequency, high in emotional arousal, and often involve terrifying ordeals. These ritual experiences are encoded in episodic memory, and participants spontaneously reflect on the meaning of the ritual through a process of analogical reasoning that continues to unfold over the course of a participant’s lifetime. Thus, ritual frequency, levels of emotional arousal, amounts of “spontaneous exegetical reflection” (SER), and concept recall performance (among others) are correlated.

To test predictions made by this theory, Richert and colleagues constructed several artificial rituals for subjects to perform. Subjects performed a ritual only once (thereby controlling for frequency), while the experimenters manipulated the levels of arousal accompanying the ritual in different groups—seeking to test for amount of SER and for recall performance. In other words, two different groups performed the same ritual, with one group doing so in conditions of high sensory stimulation (e.g. loud noises, done outside at sunset, being watched from behind by the experimenter, etc.) and the other in “bland” conditions (e.g. soft noises, in the afternoon, no experimenter watching from behind, etc.). Several weeks after the ritual performance, subjects were interviewed and asked to recall information about the ritual, and to recall their levels of “spontaneous exegetical reflection” (SER). As predicted, subjects in the high arousal groups showed better recall of the ritual scenarios and greater levels of SER than subjects in the low arousal groups.

3. Conclusions and Recommendations

The selections in the book show that the cognitive science of religion is a fresh and exciting approach to the scientific study of religion. They show that there are (1) meta-theoretical stances available to justify explanatory endeavors in the study of religion (for those for whom such justifications are necessary), (2) theoretical frameworks that provide plausible and testable explanations of why certain features of religion recur across human cultures and eras, and (3) experimental findings that provide robust support for core

hypotheses in the field. In the end, I hope not only that readers will be impressed by the findings, but also—and more importantly—that readers will be inspired by the selections to explore the field more broadly and more deeply. For such readers, I recommend the following books as places to turn.

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Part I

INTERPRETATION AND EXPLANATION: PROBLEMS AND PROMISE IN THE STUDY OF RELIGION*

E. Thomas Lawson and Robert N. McCauley

Symbolic-cultural systems are a puzzlement. As forms of thought and types of behavior they seem bizarre. Why do the Dorze of Ethiopia say that the leopard is a Christian animal which observes the fast days of the Orthodox church while protecting their goats from marauding leopards on those same fast days? Why do the Yoruba of Nigeria think that marks on a divining board that a diviner makes and reads simultaneously disclose and determine their future? Why does a marriageable Zulu male regard it as more important to swallow a foul-tasting potion to become attractive to an eligible young woman of his clan than simply relying on special adornment? Why do some Christians assert that bread and wine, once consecrated, become the body and blood of Jesus Christ?

Answering questions such as these requires metatheoretical, theoretical, and substantive reflection. In this chapter we defend two crucial metatheoretical theses. The first is that interpretive and explanatory endeavors need not be antagonistic and, in fact, should interact in the study of symbolic-cultural systems. The second is that the competence approach to theorizing offers a means for developing empirically tractable theories of participants' representations of such systems.

The continuing vigorous debate among social scientists and humanists about the roles that interpretation and explanation play in the analysis of human affairs (and the extremeness of the positions that some adopt) should rapidly eliminate any doubt about the importance of this metatheoretical question for inquiries into symbolic-cultural systems. Most scholars agree that this issue is both serious and unavoidable. They differ widely, however, not only in their views of the relationships between interpretation and

explanation, but also about the contents of the terms. Still, most do agree that interpretation involves questions of meaning and that explanation concerns causal relations (in some sense).

Proponents of the extreme positions maintain either that symbolic-cultural systems are only susceptible to interpretation (and not explanation) or that they are susceptible to explanation (and interpretation is irrelevant). The language they use frequently frames the pertinent issues in exclusivistic terms. On the one hand, scientistic thinkers (influenced by logical empiricism) read interpretive approaches as unduly subjective and personal, as speculations without foundation, and as deflecting inquiry from its true purposes—which are to produce law-like causal explanations of human behavior. On the other hand, hermeneuticists regard such scientistic views both as mechanistic (or “reductionistic”) descriptions which are insensitive to the role that the investigator’s subjectivity, values, and biases play in the pursuit of knowledge and as naive approaches which fail to appreciate the importance of questions of meaning for our understanding of human life and thought. The issue separating these feuding factions is whether or not the subject matter of the human sciences is privileged, hence requiring special categories and methods. Those of scientistic bent argue that no subject matter is privileged, that science is a unified enterprise, and that the only kind of knowledge worth pursuing is that which is produced by the kinds of methods the physical sciences employ. Those with hermeneutic inclinations fight for a privileged status for both subject matter and method and accuse those of scientistic bent of physics envy.

While the appeal to a privileged status for method and subject matter in the human sciences is widespread, it is particularly strong in the thought of those scholars involved in the study of religion and in the history of religions in particular. That field manifests a serious imbalance in favor of interpretation over explanation. For example, Eliade (1963, xiii) says:

All religious phenomenon will only be recognized as such if it is grasped at its own level, that is to say, if it is studied as something religious. To try to grasp the essence of such a phenomenon by means of physiology, psychology, sociology, economics, linguistics, art or any other study is false; it misses the one unique and irreducible element in it—the element of the sacred.

Eliade, here, is asserting that religious phenomena are *sui generis* and that they can be “grasped” (understood, interpreted) only if we grant to the category of “the sacred” a unique and irreducible status. From this point of view, explanatory theory, as developed in the social sciences, simply misses the crucial point, namely, that “the sacred” is accessible only by special (interpretive) techniques. In other words, the privileged status of the subject matter requires a special method—hermeneutics.

Eliade's protectionism is not an isolated case. The theologian Rudolf Otto (1958, 8), who had a profound influence on the development of the history of religions as a separate discipline, claimed:

The reader is invited to direct his mind to a moment of deeply-felt religious experience, as little as possible qualified by other forms of consciousness. Whoever cannot do this, whoever knows no such moments in his experience, is requested to read no farther; for it is not easy to discuss questions of religious psychology with one who can recollect the emotions of his adolescence, the discomforts of indigestion, or say, social feelings, but cannot recall any intrinsically religious feelings.

From Otto's point of view, interpretation of religious phenomena not only excludes explanation but *both presumes and requires* a prior religious experience. Hans Penner (1986) has argued that Otto's appeal to a privileged status for religious experience is theologically motivated and continues to be an unacknowledged assumption in methodological discussions in the history of religions—even when it is explicitly denied!

Examples such as these from the field of the history of religions could be multiplied but would serve little purpose. Our goal is not to excoriate historians of religions but to show that acknowledging the issues which preoccupy them does not require defending the anti-scientific positions most adopt. In fact, we would be derelict in our duty if we did not also acknowledge that the pervasive emphasis on interpretation in the history of religions has encouraged deep sensitivity to the semantic complexities of religious systems and to the diversity and richness of religious forms of experience. Unfortunately, its neglect of explanation has left it bereft of systematic power and prone to highly individualist accounts of religious phenomena.

In addition to historians of religions, many scholars in the larger world of the social sciences and the humanities have taken the development of such sensitivities to the complexities of symbolic-cultural systems as a principled ground for preferring interpretation over explanation. Their views are typically rooted not, as in the history of religions, in claims about the privileged status of "the holy" or "the sacred," but in more extravagant claims about the autonomy of human behavior generally. Their view is that symbolic-cultural systems by their very nature require interpretive rather than explanatory approaches.

By contrast we hold that interpretation and explanation are complementary, and, in light of the imbalance within the study of religion in favor of interpretation that we wish to redress, the proposal of explanatory theories is more likely to advance our knowledge currently. In fact, a number of theoretical approaches are worthy of further attention. Their mere existence belies claims to the effect that plausible theories of religion are impossible.

In the next section we shall first describe the most prominent positions that have been advanced in the relevant literature concerning the relationship between interpretation and explanation. We think that both scientific and hermeneutic hegemonists are wrong for claiming that the choices are between explanation and interpretation. Nor do we think that explanation is subordinate to interpretation. A more balanced position is not only possible but desirable.

Explanation and Interpretation: Three Accounts

When we are dealing with human subjects, their forms of thought, their types of practice, what are the respective roles of explanation and interpretation, however finely or coarsely they are distinguished? We think that a careful analysis of the debate discloses three views about how they are related. These are the actually occurring options in the literature as opposed to the much larger number of logically possible positions. The first are the exclusive positions to which we have already referred. Both hold that interpretation and explanation exclude one another. Their differences concern which of the two they favor. The second is the inclusive which maintains that explanation is and must be subordinated to interpretation. Inclusivists hold that the enterprise of interpretation always encapsulates explanatory pursuits. The third, which we shall defend, is the interactive. It proposes that interpretation and explanation inform each other. Novel interpretations employ the categories of theories already in place, whereas novel explanations depend upon the discovery of new theories which, in turn, depends upon the sort of reorganization of knowledge that interpretive pursuits involve. On the interactive view these two processes complement one another. We shall discuss each of these positions in order.

Exclusivism

The exclusivist positions are both hegemonistic views. Exclusivism takes two forms, one emphasizing the centrality of explanation, the other the centrality of interpretation. The first group of exclusivists, consisting of behavioral psychologists, sociobiologists, and others, holds that the only methods for systematic inquiry are the methods of the natural sciences. (See, for example, Skinner 1953, 87–90 and Rosenberg 1980.) The second, which focuses on interpretation exclusively, includes such post-modernist philosophers as Rorty (1982, 199) and holds that all inquiry is ultimately interpretive.

(1) For the first group explanation excludes interpretation because human thought and behavior should be studied, like anything else in the world,

according to the strict canons of scientific investigation modeled after inquiry in the physical sciences. Interpretation is irrelevant, if not impossible, for such purposes. Explanation is simply scientific explanation. On this exclusivist view, if the human sciences aspire to be sciences at all, then they should be modeled after the physical sciences. Both should search for causal laws which describe the behavior of the objects in their respective domains. Interpretive factors simply get in the way and introduce needless obscurities. For example, concerns with subjectivity or intentionality only interfere with scientific progress (Rosenberg 1980).

This position was most forcefully developed in the heyday of the logical empiricist philosophy of science. However, its influence has persisted. Richard Rudner's discussion (1966) of the philosophy of social science is a fitting illustration. Rudner maintained that the structure of theories in the study of social and cultural systems should mirror the idealized accounts of theories in the physical sciences that earlier logical empiricists had offered. For Rudner, understanding social worlds (just as understanding the natural world) is essentially a consequence of formulating causal explanations.

More recently, Adolf Grunbaum (1984) has taken up this banner in his attack on recent hermeneutical reinterpretations of Freud by Habermas, Ricoeur, and Klein. For instance, Ricoeur, according to Grunbaum, reduces the object of psychoanalytic theory to the verbal transactions between psychoanalyst and patient and then argues that such verbal transactions require interpretive rather than explanatory approaches. Ricoeur, for example, says: "There are no 'facts' nor any observation of 'facts' in psychoanalysis but rather the interpretation of a narrated history" (1974, 186). Grunbaum argues that such a hermeneutic explication of psychoanalysis as interpretation rather than explanation conforms neither to the intention of Freud nor to the logical structure of his arguments. He argues that psychoanalysis, according to Freud, has the status of a natural science, in virtue of the fact that on Freud's view psychoanalysis proposes law-like generalizations to explain human behavior. Ironically, Grunbaum salvages the explanatory intent of Freudian psychoanalysis in order to scuttle it on different grounds, namely its "genuine epistemic defects, which are often quite subtle" (1984, xii) but which boil down to psychoanalysis' masking a crucial ambiguity about the role that suggestion plays in the psychoanalyst-patient relationship. Clearly, from Grunbaum's point of view, natural science is fundamentally explanatory and includes interpretive elements only incidentally. If psychoanalysis is to be a social *science*, then it should be modeled upon the natural sciences. There is no need to introduce interpretive categories.

What should be noted in this brand of exclusivism is how hermeneuticists such as Ricoeur play right into the hands of the scientistic exclusivists by acknowledging the right of the latter to establish the form and limits of explanation. For example, it is clear from the quotation taken from Ricoeur's

work that he concedes to the logical empiricist the “observation of facts” which he then *contrasts* with narrative interpretation. He attempts to purchase autonomy for interpretation at the expense of its ability to contribute to explanation. Not surprisingly, as we shall see next, one form of exclusivism breeds another. Scientistic exclusivism leads to the hermeneutic variety, because it so limits acceptable subject matters and methods that it forces dissenters in response to focus upon just those features of human experience that extreme scientism ignores, such as the affective, the personal, the subjective, the meaningful, the valuable, and the imaginative, to name the most important.

(2) For the second group interpretation excludes the possibility of explaining human behavior, because all inquiry about human life and thought occurs within the ineliminable frameworks of values and subjectivity. This version of the exclusivity thesis is the mirror image of the first position and was partially developed in response to it. In this view human beings are subjects not objects; therefore we should explicate the *meaning* of their thoughts and actions, rather than the alleged causal factors that account for their behavior. Human science reveals its differences from natural science by paying attention to a world of meanings rather than a system of causes. Its approach must be semiotic rather than nomological.

While such a semiotic approach has many exemplars in the human sciences (for example, Lesche 1985), Clifford Geertz (in, at least, some of his moments) has been particularly influential in its defense. While his actual work contains a great deal of creative explanatory theorizing, his methodological pronouncements often have a decidedly exclusivistic ring. We should state at the outset that Geertz’s pronouncements about these issues do not *always* follow along the lines we discuss here. Nevertheless, Geertz does enunciate this methodological perspective quite forthrightly in the following passage (1973, 5):

The concept of culture I espouse and whose utility I now attempt to demonstrate is essentially a semiotic one. Believing with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be, therefore, not an experimental science in search of law but an interpretive one in search of meaning.

Geertz, *here*, clearly advances an exclusivistic hermeneutic agenda; it is the job of the scholar in the human sciences to *interpret* the semiotic patterns of those “webs of significance” spun by humankind rather than to explain their connections. Interpretation does not mean proposing principles that show systematic connections among idealized theoretical objects, nor does it mean identifying causal factors; it means unpacking meanings. Human science

should involve the *discernment* of meanings rather than the discovery of laws. A cultural system consists of “socially established structures of meaning.” Because it is *socially* established, i.e., a creation of the participants, it does not exist as an entity available for explanation. The only option is for the interpreter to enter it as a world of meaning. The interpreter is in the position of a stranger invited into a home or a reader enticed into reading a book. Explanatory theory is simply not to the point. This methodological perspective is not simply a heuristic strategy in the face of cultural complexity, but a necessary consequence of the character of human interaction—especially interaction across cultures.

Geertz sometimes seems to think that a principled ground exists for justifying the exclusive preference for interpretation in the study of human subjects in their self-woven cultural webs. The alleged problem lies in the very nature of explanation itself. It is not simply that it has a limited value nor that whatever explanations we do come across constrain our interpretations, but rather that our reading of cultural “texts” requires sensitivities to the subjective and semantic dimensions of human thought and action which are absent from explanatory approaches. On this position *the search for explanatory theories with respect to human subjects is fundamentally misdirected*. It fails to acknowledge the autonomy, independence, and uniqueness of the subject matter of the human sciences.

When pursuing this position, Geertz’s argument goes something like the following: an examination of the *practices* of anthropologists (those scholars most directly involved with examining symbolic-cultural systems) discloses their fundamentally *ethnographic* approach. What ethnographers do is establish rapport with their subjects. They enter into a hermeneutic relationship with them. In such a relationship they are consistently trying to understand other forms of human meaning. These other forms are not transparent to the ethnographer; their opaqueness requires interpretation. They need to be broken through. Geertz argues that such interpretive analysis involves “sorting out the structures of signification ... and determining their social ground and import” (Geertz 1973, 9). Questions of “import” are questions of interpretation which enlarge the universe of human discourse (1973, 14). Geertz thinks that the mistake made by those scholars who search for explanations is that they view culture as a power—something causally responsible for social events, behaviors, institutions, and processes. Instead, he thinks that a cultural system is a context, something within which the structures of signification can be “intelligibly—that is, thickly—described” (1973, 14).

With such views of culture and of the aim of anthropology there seems little, if any, room for explanatory theory. Interpretation, characterized now as thick description, in the context of the human universe of discourse is all that is possible. Ethnography as the interpretation of cultures excludes explanation. It must stay “much closer to the ground”; in fact, it is incapable of

either generalization or prediction (1973, 24–26). Explanation is a matter for the “hard sciences.” Ethnography, by its very nature, carves out an exclusive niche for itself, free from a concern with testable generalizations.

By now it should be clear that both forms of exclusivism are in remarkable agreement on at least two issues, namely (1) that explanation is the search for causes and the laws that describe their operation and (2) that the goals and methods of the natural sciences differ radically from our other knowledge-seeking activities. However, they draw exactly opposite conclusions (McCauley 1986a). The advocates of the explanatory methods of the physical sciences regard interpretive projects as superfluous speculations, whereas the advocates of the centrality of interpretation in the human sciences regard these endeavors as indispensable and explanatory projects as foreign and even inimical to understanding human affairs. They disagree only on whether causes and laws are applicable to human thought and action.

We think that the issues of relating explanation and interpretation are much more complex than the defenders of either of these exclusivistic positions willingly acknowledge. More moderate positions are clearly possible.

Inclusivism

The second and more moderate set of views is inclusive but still requires the subordination of explanation to interpretation. Although in principle inclusivism could be a two-way street, in fact it is not. Reliably, it is explanation that is subordinated to interpretation and not the other way around. Such subordination takes a number of possible forms. We shall first discuss three versions of this view. We shall criticize a number of their common assumptions directly in the last part of this section and indirectly in the presentation of the interactionist position which follows.

(1) The first way of subordinating explanation to interpretation involves not so much the goals of inquiry as much as it does explanation’s practical unrealizability. This view holds that the barriers to explanation in human matters are practical rather than principled. We may dub this approach “pragmatic modesty” and Edward Shils (1972) is its best representative. He willingly acknowledges the lack of nomological progress in the human sciences and thinks that practitioners in the human sciences cannot do much more at present than set their sights on more modest accomplishments. Perhaps one day the methods, procedures, and concepts of the social sciences will be more sophisticated and refined enough to place social and cultural inquiry on a firmer methodological and theoretical footing. But for now the human sciences are a “heterogeneous aggregate of topics, related to each other by a common name, by more or less common techniques, by a community of key words and conceptions, by a more or less commonly held

aggregate of major interpretive ideas and schemas” (1972, 275). Interpretation is primary; explanation is subordinate.

According to Shils, human beings living in social situations have had to make policy decisions for millennia. The practicalities of such decision-making lead to questions about the principles on which they are made, that is, the basis for choosing one policy rather than another for organizing and enhancing social life. What is the basis for those policies which guide human choices? “Social science” simply makes this complex and intricate project of devising adequate and fruitful policy for the ordering of social life more systematic. It is an essentially interpretive undertaking driven by the practical necessities of life. It is not that interpretation excludes explanation; explanation is allowable but, at present, unreachable. That is not where we need to place our attention.

Shils states his position most forcefully in the following passage (1972, 275–76):

Most sociology is not scientific. ... It contains little of generality of scope and little of fundamental importance which is rigorously demonstrated by commonly accepted procedures for making relatively reproducible observations of important things. Its theories are not ineluctably bound to its observations. The standards of proof are not stringent. Despite valiant efforts its main concepts are not precisely defined; its most interesting interpretive propositions are not unambiguously articulated.

So, whereas social science is not very scientific in terms of rigorous demonstration, reproducible results, and all the other paraphernalia that accompany natural sciences, as a system of interpretation, “an aggregate of major interpretive ideas and schemes” constraining a severely limited explanatory component, it is capable of effecting human progress.

(2) Some scholars argue that, in the case of human subjects, understanding is not only the *goal* of inquiry in the human sciences but must also be the *method* of inquiry. When human symbolic systems are the subject matter of study, explanatory approaches cannot reach the goal of understanding without first adverting to the rational content of the systems in need of explication, and rational content requires rational analysis. The consequence of that view is that reasons require understanding and not causal explication. The human sciences study reasons rather than causes because human action is, in fact, behavior undergirded by reasons. Reasons require understanding and therefore interpretation; causes require explanation. According to Peter Winch (1958, 23), Durkheim adopted a regressive position when he said:

I consider extremely fruitful this idea that social life should be explained, not by the notions of those who participate in it, but by more

profound causes which are unperceived by consciousness, and I think that these causes are to be sought mainly in the manner according to which the associated individuals are grouped. Only in this way, it seems, can history become a science, and sociology itself exist.

As Winch recognizes, Durkheim is trying to establish a social science according to the model of a natural science by attempting to locate “more profound causes” than rational contents which are normally held to explain human behavior. From Durkheim’s point of view, the ideas of the members of a society are not the subject matter of the social sciences; that subject matter about which scientific generalizations can and should be made are “social relations.”

Winch thinks that changing the subject matter in this way is a mistake and proposes, instead, that we look precisely at actions which are performed for reasons. When we analyze such actions we uncover meaningful behavior. “All behavior which is meaningful (therefore all specifically human behavior) is *ipso facto* rule-governed” (1958, 52). Such rule-governed behavior has more to do with the relationships between ideas requiring interpretation than it does with causal relationships involving theoretical explanation. “It is like applying one’s knowledge of a language in order to understand a conversation rather than like applying one’s knowledge of the laws of mechanics to understand the workings of a watch” (1958, 183).

What is interesting about Winch’s view is that it does not necessarily exclude the causal role that reasons might play in accounting for human behavior. After all, reasons can be causes. But Winch is more interested in analyzing the *relations* between reasons than their causal role. Relations between reasons and actions require an analysis in terms of rules rather than an explanation in terms of causes.

Winch’s view has attracted ample criticism already (Wilson 1970). In addition, a more sophisticated version of the view has emerged. The reservations we express with Rudolf Makkreel’s view discussed below apply with even greater force to the position Winch defends.

(3) Makkreel (1985) asserts that all discussions of human interests and intentions are *fundamentally* interpretive and that, virtually by definition, human interests and intentions pervade all human activity. Hence, as Rorty and other interpretive exclusivists have maintained, even the natural sciences contain an ineliminable interpretive element. However, there is a second sort of higher level, hermeneutic endeavor which recognizes the importance of subjects’ *own* views of their interests and intentions, maintaining that they always constitute an additional set of factors which enter in the mix. Although these self-perceptions enjoy no ultimate explanatory privilege, they are also ineliminable in discussions of human affairs. Such interpretive endeavors set

the agenda for any explanatory excursions we may make in our attempts to account for human behavior. This position is not antagonistic to explanation, but it does insist that explanatory projects are always dependent upon and, therefore, subordinated to the interpretive enterprise.

Makkreel states that: "explanation involves subsuming the particular data or elements that can be abstracted from our experience under general laws, whereas understanding is more concerned with focusing on the concrete contents of individual processes of experience to consider how they function as part of a *larger continuum*" (1985, 238, emphasis ours). He thinks that any understanding of human experience will have to subordinate explanatory theories (which are arrived at by *abstraction*) to interpretive endeavors (which are focused on the *concrete* contents of that human experience). These concrete contents have a priority over abstractions from human experience. Furthermore, the point about these contents of experience is not so much what accounts for them as it is their position and role in the "larger continuum." Makkreel does not shrink from the charge of circularity so frequently leveled at hermeneuticists. In fact, he acknowledges the circularity of hermeneutics and argues that it is productive. Its productivity lies in its ability to "widen our framework of interpretation and generate new meaning, so that we will not just refine our original understanding but enrich it" (1985, 247).

Although we thoroughly concur with Makkreel's view of the productivity of interpretation, the position he defends seems incomplete at certain points. Happily, his view widens the hermeneutic circle by focusing on the production of new meaning. But it faces three problems. First, the production of new meaning assumes a great deal of background knowledge (which is both relatively fixed and relatively reliable). Both the fixity and reliability of that background knowledge depend largely upon the stability of previously established explanatory theories. Consequently, the hermeneutical process presupposes, in part, what it allegedly subordinates. The point, in short, is that we cannot expand our meanings without already assuming that we have some knowledge of the world already in place.

Second, the position in question does not deny the possibility of empirical psychology. Presumably, some theories in that field constitute part of the background knowledge which undergirds interpretations. The world that science discloses includes facts about ourselves. Consequently, the priority attributed to self-perceptions of interests and intentions is problematic in the face of scientific findings to the contrary. For example, considerable recent work in social cognition has consistently demonstrated subjects' ready willingness to cite plausible common-sense explanations of their behaviors in terms of standard folk accounts of their interests and intentions, even when, unbeknownst to them, those accounts are thoroughly unrelated to the causal variables experimenters have isolated which are sufficient to explain the overwhelming bulk of the variance in their behaviors. (See Nisbett and Wilson

1977, Nisbett and Ross 1980, Stich 1983, and Churchland 1986.) In light of this research it is unclear why researchers should hold out for the ineliminable importance of subjects' accounts of their intentions and interests in all cases of intentional action.

These self-attributions are informed by our prevailing common-sense view in psychology. But the history of science is replete with examples of new scientific discoveries overthrowing the prevailing common-sense or folk theories. Common sense is theoretical through and through (Churchland 1979). This includes not only common-sense views of the external world but also common-sense views of (even our own) internal, psychological goings-on (Churchland 1988). If common-sense accounts can compete with those of science, then they are subject to correction or even elimination in light of the theoretical upheavals which characterize scientific change (McCauley 1986b).

Third, although the production of new meaning may enrich our knowledge, it cannot account for the production of new *knowledge*. At least some of the time when the world proves recalcitrant to the theories that we propose, neither the stock of meanings we possess nor the interpretations we impose are capable of overcoming the disparity. Rappaport (1979, 139) protests that "as law cannot do the work of meaning neither can meaning do the work of law. The lawful operation of natural processes is neither constituted nor transformed by understanding, and the laws of nature prevail in their domains whether or not they are understood or meaningful." Occasionally, phenomena from the parts of the world that our established theories organize refuse to behave properly no matter how much those theories bend. Every genuinely *empirical* theory has its breaking point, and the incompatibility of some phenomena is too heavy for them to bear. If they could accommodate anything, the theories in question would not be empirical. Although Kuhn (1970), Laudan (1977), and others have documented the many strategies scientists have employed to shelve such anomalies, they concede that in the long run it is precisely the persistence and proliferation of such anomalies that is the single most fundamental force in scientific change. If all theories could accommodate anything (by simply producing new meanings), we could make no sense whatsoever of distinguishing between the relative empirical responsibility of the various disciplines such that it remains uncontroversial when we label some as sciences.

Hence, the development of new explanatory theories has one foot in the hermeneutical circle but another outside it as well at least to the extent that we *presume* a great deal of explanatory knowledge when we contemplate alternative interpretations. This is not to say that interpretation has no role here, but rather that in any inquiry we *must* leave the huge majority of our systematic empirical knowledge unquestioned. Inquiry could not proceed if we left even much of that knowledge up for grabs. Certainly, the generation of new explanatory knowledge does depend, in part, on interpretive endea-