STEPS TOWARD A COGNITIVE SCIENCE OF RELIGION

by Lluís Oviedo

Abstract. The article chronicles the different panels devoted to the cognitive science of religion at the meeting of the Society for the Scientific Study of Religion (SSSR) in Tampa, Florida, in November 2007. The aim is to verify the state of this subdiscipline and to check how much this work-in-progress affects the present state of the dialogue between science and religion. Several signs point to a positive development in this scientific branch and favor a sound reception in theology, which should not ignore the new research.

Keywords: cognitive science; religious mind; religious studies; theology and science

---

Science is, by its own nature, a progressive enterprise; it needs to grow in order to demonstrate its validity. For a new scientific branch, such as the "cognitive science of religion," the pressure to grow and to deliver useful and significant results is still more crucial; otherwise, it is not worthy of all the effort and investment required to launch a new discipline.

The meeting of the Society for the Scientific Study of Religion (SSSR) that took place 2–4 November 2007 in Tampa, Florida, provided an opportunity to check the pace of growth of this new field and to ascertain how much we know about the "religious mind." Indeed, there was a considerable increase in the number of related papers offered for the occasion. This is a relevant symptom of a trend in the scientific study of religion: the emergence of a new paradigm able to compete with the well-established ones—sociology, anthropology, and so on.

Conferences on the cognitive science of religion have proliferated in recent years. Points of interest have been the evolution of religion, an issue

Lluís Oviedo is Professor of Theological Anthropology, The Pontifical University, Antonianum, Via Merulana 124, 00185 Rome, Italy, and invited Professor of Theology and Culture, The Pontifical Gregorian University, Rome; e-mail loviedo@antonianum.eu.

[*Zygon*, vol. 43, no. 2 (June 2008)]
 ISSN 0591-2385

at the center of several lines of research; and the function of culture and symbols in religious cognition, a rather alternative path of study. The conferences have served in part to present the real state of research and to deepen some characteristic debates in the subdiscipline, typically the one between adaptionists and by-product theorists.

The present essay introduces the different approaches offered in the context of the SSSR annual meeting in order to assess how much progress is to be perceived, which are the directions of the research, and what is their meaning for the dialogue between science and religion. Because the aim of *Zygon* is to advance that dialogue, I consider fully relevant the outcomes of the new science for those engaged in this interdisciplinary endeavor.

I review the papers concerning the cognitive science of religion delivered for that event in the order they were presented in the meeting, gathered into thematic panels, and avoid other attempts at organizing the material.

The first panel dealt with the very thorny issue of "Genetics and Cognitive Science" applied to religion. Matt Bradshaw (University of Texas at Austin) offered his research titled "Genetic Influences on Religious Involvement: Correlation with an Adaptive Trait as a Possible Explanation." Using the well-known method of comparing traits among identical and fraternal twin siblings, he tried to distinguish between different sets of influences on religious involvement: genetic, family environmental, and nonfamily environmental. His analyses indicated that genetic factors explain significant proportions of the variation on organization-based aspects of religious involvement (such as service attendance) as well as personal religious salience (the relative importance of religion in one's own life). Given that explanations for these findings are currently unclear, the author proposed the hypothesis that genetic effects on religious involvement might be the indirect by-products of more general genetic predispositions toward social life (a socially committed personality) that are at least partially satisfied by religious participation. His data appeared to offer preliminary support for this hypothesis.

There followed Aaron D. McVean and R. David Hayward (both University of Nevada, Reno) with research on the levels of certainty felt among people, with particular attention to the fear of death. Their aim was to construct an "independent measure of existential certainty" through the use of questionnaires and statistical tools. The authors managed to extract four factors: self-concept, group belonging, experiential certainty, and temporal perspective. The study showed interesting correlations between these factors and other variables, such as intrinsic versus extrinsic religiosity and personality traits. The authors defended the usefulness of their "index" in order to measure levels of anxiety and to test cases of "religious coping."

The third paper of the panel was delivered by Tom Sjöblom (comparative religion, Helsinki, Finland) with the title "Awe—Towards a Naturalis-

tic Account." He defended the naturalness of religious commitment, related to emotional commitment (following Paul Thagard). Religion exploits some emotional programs linked to social interaction. To make his case, the author offered a list of different emotions associated with the religious experience, including awe, guilt, disgust, anxiety, and fear. Taking into account the adaptive character of such emotions, often bounded with moral requirements, Sjöblom pointed to a view of religion as something using our natural dispositions, "an attempt to catch awe, in a psychological sense."

Another relevant panel, even if not directly classified in the category of cognitive studies, was devoted to commentary on the new book by William Sims Bainbridge, *God from the Machine* (2006). The author made the case for employing computer simulations as a methodological resource in order to better understand religious processes in society and in the mind. In a basic way, the program he introduced could describe lines of tendency of religious behavior, when levels of isolation or contact were accounted among religious actors. The technique of "neural networks" provided the algorithmic base for his model. His colleague Chris Bader (sociology, Baylor) suggested an alternative approach, a seemingly more complex program able to take into account more variables. The discussion that followed focused on the range of applicability of the new proposed tools, to better understand how the religious mind works. Particular concern arose about how much the simulations could integrate such factors as identity and culture, which play a significant role in every religious process. Other reasons for concern were the eventual relationships of the simulation models to the empirical reality; proponents argue that simulations can provide hypotheses to be tested by empirical research.

The third relevant panel carried the suggestive title "Cognitive Science of Religion: The Naturalistic Basis of Religion and Religious Experience." The first paper was delivered by Armin Geertz (religious studies, Aarhus Univ., Denmark) on "Comparing Scenarios on the Evolution of Religion." He argued for extending the forces involved in religious evolution beyond sheer biological selection to include symbolic and cultural forces, clearly implicated as well in the dynamic that allows religious ideas to emerge and develop.

Claire Cooper's (psychology, Queen's University, Belfast) presentation was titled "The Naturalistic Foundations of Reincarnation Beliefs." Cooper drew upon the cross-cultural recurrence of some aspects of reincarnation beliefs, such as the idea that humans may be reborn as humans or animals, and that memories are judged as reliable indexes of identity, irrespective of one's explicit religious beliefs. She proposed that we look toward the evolved cognitive architecture of the human mind to account for such recurrences, since appealing only to explicit religious beliefs or cultural factors in isolation cannot account for these same beliefs.

Ann Taves (history, University of California, Santa Barbara), under the generic title "Religious Experience and the Brain," covered different approaches to better understand religion, beyond the "sui generis" closing. Religion can be conceived as a result of "causal attribution," a way to discern why things happen, and the "deeming model," that is, a descriptive cognition on how things are. Hallucinatory experiences can be seen as examples of this process, wherein people consider strange images to be real—in their subjectivity.

Don Braxton (religious studies, Juniata College) offered in the same panel his research on "Modeling Sensory Pageantry and Arousal." His aim was to test a well-known hypothesis advanced by Robert McCauley and Thomas Lawson: that religious rituals are distributed along two attractors —one that stresses frequency and another pointing to low frequency but higher arousal levels, in order to support religious memory formation. His approach was systemic. In his view, modeling ritual forms, combining high or low frequency and high or low arousal, may help to test the levels of working- and long-term memory. The model demonstrated cultural selection pressures in a fitness landscape designed to imitate human cognition. In this form of modeling, various ritual forms compete for the attention of minds, in essence struggling to survive and replicate. Failure to replicate can lead to extinction of a cultural form, which in this case means they are forgotten. His conclusion was that "cultural scaffolding is required to support memory salience" for high arousal ritual forms.

Justin Barrett (anthropology, Oxford) closed this intense session with a methodological proposal to measure levels of counterintuitiveness in religious concepts. He departed from the hypothesis of Pascal Boyer and others that religious ideas require minimal levels of counterintuitiveness to assure their success, and the distinction proposed by McCauley between natural cognition, counterintuitive; and practical cognition, counterschematic. He proposed a series of six steps in order to qualify levels of counterintuitiveness in religious concepts, taking into account how much such concepts depart from basic assumptions, driving transfers or breaches of ontological categories. He tested his analytic instrument with four religious tales of ancient cultures, and then scored their breaches and transfers. He concluded that the results were consistent with the original hypothesis, that is, minimal levels of counterintuitiveness were the most frequent in the tales he considered, and could explain their success.

The next relevant panel carried the title "Bricks and Bridges: Developing Inter-disciplinary Infrastructure in the Cognitive Science of Religion." Barrett was again a panelist, and as a scholar engaged in the project he spoke on "Keeping 'Science' in Cognitive Science of Religions: Needs of the Field." He pleaded for attention to three distinctive needs in order to address the scientific requirements: more empirical support, more cross-trained scholars, and more empirical projects addressing theologically relevant issues. This led to a critical analysis of two difficulties experienced to

test major theories: (1) some acquired habits in humanities and (2) academic isolation. He appealed for sharing methodologies and for cross-disciplinary collaborations. Later, he announced some projects already in preparation in order to cope with the described challenges: to address specific religions and cultures; to address topics that are of theological interest for religious people; and the need for empirical projects addressing theologically relevant issues.

Brian McCorkle (psychology, Boston University) offered in the same panel his contribution, "Some Reflections on Where (and How) We Stand: The Importance of Individual Differences." He called for assuming the means of clinical psychology, a "systems approach of clinical science," which should assume a bio-psycho-social model, because all behavior occurs within an overlapping set of systems. The tension between individual and group levels was recalled, hence the need to take into account individual differences. He concluded that it is vital for the advance of science that we do not all agree—in other words, he stressed the value of dissent. The differences are indicated both at the level of the individual religious persons, where variation becomes normative, and at the level of the scientific observer, where such disparities are fruitful.

Thomas Lawson (anthropology, Queen's University, Belfast), a respected senior scholar, one of the founders of the new discipline, delivered his speech with the title "Growing the Field: Looking Forward, Looking Back." It was a summary of how the cognitive study of religion arose and developed in the last years, showing its progress and the incorporation of ever more researchers and methods from different fields into the discipline.

Paul Wason closed the panel with his "Becoming Seriously Interdisciplinary: Benefits and Pitfalls of the Meeting of Academic Cultures." He represented the Templeton Foundation and so stressed the need of converging different lines of study and sensibilities—scientific and religious—reflecting the program of the foundation, which supports some of the research projects already going on in the field.

The ensuing discussion pointed to the need to go beyond some reductionist approaches and, as Geertz recalled, overcome the predominant isolation of cognition from culture, and language from social relationships; the cognitive study of religion should become a more integral enterprise, comprising both the internal and the external dimensions involved in cognitive processes.

The last relevant panel explicitly devoted to the cognitive study of religion offered two papers. The first, by Joseph Bulbulia (religious studies, Victoria University, Wellington), was "Anthropomorphism, Niche Construction, and Morality." For him, evolutionary game theory provides an important corrective to standard cognitivist accounts of religion and morality. Religiosity is poorly conceived as minimally adjusted counterintuitive information—"the familiar made strange." He recalled Stewart Guthrie's

view of religion arising from anthropomorphic tendencies and proposed to test this view in the field of social interaction. People who feel they are under observation behave more prosocially, and therefore anthropomorphic tendencies will produce moral effects, avoiding free riders among beneficiaries of altruistic behavior. Bulbulia resorted to economic games to test this point and concluded that religiosity may be seen rather as a form of "skillful social engagement," one that benefits religious agents by enabling them to solve reliably prisoner's dilemmas and other cooperation problems that threaten social life. In his opinion, religion is a tool we evolved for mass cooperation—and our minds have evolved to perfect its use.

Peter Richerson (environmental science, University of California, Davis) analyzed a practical case: "Evolutionary Forces Acting on Religion in the United States." Using a complex evolutionary theory, he proposed a taxonomy of the forces acting in that process: new variations, natural selection, and decision making (human agency). Applying this model to the United States, he distinguished the kind of selection favoring conservative Protestants and some sects. Richerson had in a former panel made his case for "group selection" and shown "How Religious Organizations Evolve in Free Societies." He began with the statement "Humans are the animals that by nature live in tribes"; these groups are "crude and conflict ridden," but some work much better than others. His position was based on the theory of co-evolution of genes and culture and the so-called evolutionary functionalism. Humans depend massively upon learning from each other—from culture, including religion. From this set of theories he deduced that religion favored minimally counterintuitive preferences, which were adaptive for the species. Nevertheless, his theory shows the high complexity of selective processes, the many trade-offs among adaptations at the different levels; he called for more caution in considering religions more or less adaptive.

Taking into account all that was said and the discussions following the presentation of the papers, some progress can be noted in the new discipline and some encouraging signs for fruitful engagement in the relationship between science and religion. In what follows I express my personal opinion as a scholar from the theological field involved in the evolutionary and cognitive study of religion, not as an external observer but as a "seeker" looking for new ways to understand faith and religious commitment.

First, an explicit will to transcend boundaries and to engage actual religion and religiously informed traditions more productively emerges as a healthy trend, advocated by Barrett among others and prompted by such institutions as the Templeton Foundation. It constitutes a symptom of a change in mentality; the cognitive study of religion becomes not just a "science overcoming religion" but rather a "science collaborating with religion." Indeed, few if any of the presentations assumed a dismissive tone

regarding conventional religious beliefs and behaviors, as has happened in former conferences, where, even while their program was devoted to the dialogue between science and religion, they ended up being rather conferences on "science against standard religion."

Of course, real progress should be measured in the actual contents of the research, not just in formal issues and setting targets. I have noticed interesting developments in several cases. Some papers were providing more convincing empirical research in order to make their case; the thorny issue of the more or less adaptive nature of religion collected more arguments for the adaptive party; evolutionary issues were better integrated into the cognitive fabric, resulting in a more complete and complex view of the forces involved in the evolution of religion. It is encouraging that some presenters, including Geertz and Richerson, paid more attention to the symbolic and cultural realms and overcame the sheer genetic or naturalistic level. Emotions were taken seriously into account, prompting a broader picture on the factors involved in religious cognition. New lines of research were introduced: genetic studies on twins; experiments with the prisoner's dilemma including the religious variable; computer simulation programs; more refined statistical tools, attempts to better categorize levels of counterintuitiveness, certainty, or arousal. All of this represents advancement in the endeavor to build a cognitive science of religion, and the general impression is that this new paradigm is expanding at a good pace.

Nevertheless there are still reasons for concern, from the religious side. Beyond the scientific advancement, general and particular issues need to be addressed. The general issues concern the very nature of the object of study and the limits that the scientific endeavor should acknowledge if it is to maintain its work as genuine science.

In an article recently published in this journal (Oviedo 2008), I tried to show these limits and to throw light on some uncertain leanings in the new science. I can elaborate here what I said there. First, the cognitive science of religion usually deals with one dimension of religious experience, the one we can describe as the "preconscious mechanics" of mental processing, and ignores all the rest, in particular its contents and conscious elaboration. The historical experience suggests that no complete picture of religion will be obtained so long as a theory of religion is unable to deal with the other side, the objective: the study of the so-called supernatural agents, their attributes or characteristics, what makes them credible or able to trigger awe in those feeling their presence. The study of religion has suffered since early modern times of a sort of circularity between both sides. To explain the subjective religious experience, the scholar would sooner or later have to move to the study of the transcendent being or beings the believers confessed, but that knowledge was not complete without a study of the inner experience of the religious person. A kind of "theology" is unavoidable so long as the aim of research is to understand what "religion"

is. Ever since theology became a serious intellectual endeavor, a tension has existed between the attempt to conceive the reality of God and the personal experience of faith. Theology struggled to keep both dimensions connected. The point is that even if the endeavor of the new science is useful, it should be aware of its incomplete character and nature, and, perhaps more important, it should recognize that its progress depends deeply on a true interdisciplinary collaboration with academic theology.

Another cause of concern results from the often-perceived inability of the new science—except Richerson—to take into account the degree of contingency present in religious process, as happens in every human and social process. Contingency is a category well ingrained in more human and social sciences; scholars need to account for a factor of unpredictability in many settings and for the fact that every human and social venue requires specific theoretical treatment. Of course, too much contingency would destroy any attempt to build a true science, because we could never control more than a small set of variables; science rather tries to reduce contingency and to predict how things will proceed after controlling the principal variables involved in a process. Nevertheless, in the social and human realm, things generally proceed at a rate different from that in the physical and biological realm, and every theory or science pretending to reveal the internal logic of the human reality should be much more cautious. Such caution has been evident in the past when scholars tried to categorize and quantify factors involved in the religious experience and evolution. A cognitive science of religion should limit itself to conceiving and describing patterns of religious belief and behavior, as other human sciences usually do, depending on the different variables involved, and avoid overly general statements or the pursuing of a "general scientific theory of religion."

Last, but not least, sometimes the theological observer could feel a sense of a sort of Heisenberg or Schrödinger indeterminacy—I mean something similar to what happens at the subatomic level of observation, when it becomes difficult to get and measure the "real thing." Religion, in its cognitive-scientific treatment, often becomes an entity distant from the true religious experience. "Cognitive religion" seems quite different from what you get by attending a worship service in a vibrant community or in personal mystical experiences. Barrett was correct to claim a closer approach of the new discipline to real religious persons as a condition for true scientific treatment of religion. The danger he is trying to avoid is that the cognitive approach plays with a constructed entity, a sort of research tool or mental experiment, with almost no contact with reality. Such a tendency would bring serious problems to any discipline wanting to become "scientific."

My personal feeling is again that the cognitive science of religion needs a more committed engagement with well-informed theology if it wants to

become not just a science but a useful discipline in order to better understand religious processes. By the same token, theology needs to take into account the cognitive science of religion in order to overcome poor and anachronistic views of the experience of faith and to ingrain its knowledge into a more plausible framework. Indeed, many contributions of the new science are relevant for theological studies. They will be received sooner or later, perhaps first in the biblical field, and then in theological anthropology. It would be unwise to ignore their interesting findings.

References

Bainbridge, Sims. 2006. *God from the Machine*. Oxford: Altamira.

Oviedo, Lluís. 2008. "Is a Complete Biocognitive Account of Religion Feasible?" *Zygon: Journal of Religion and Science* 43:103–26.