

BOOK REVIEW

Sacred or Neural?
The Potential of Neuroscience to Explain Religious Experience

Anne Runehov

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Anne Runehov's project concerns the debate of Science and Religion, more specifically, Neuroscience and Religion. She asks whether religious experiences, merely are a product of the human nervous system or are they experiences of some Ultimate Reality? In other words, she wonders whether religious experiences are sacred or merely neural? Neuroscientists place different explanations at our disposal concerning what religious experiences are and what causes these experiences. For example, some neuroscientists explain religious experiences in terms of consequences of a damaged, malfunctioning or mentally deranged brain. Others explain them in terms of existential crises. Again other neuroscientists maintain that religious experiences are correlated with the brain as do all human experiences. Hence, Runehov asks what exactly is the potential of contemporary neuroscientists to explain religious experiences? In order to find an answer to that question, she chose to analyse and evaluate the research performed on religious experiences of the Canadian neuropsychologist Michael Persinger and the American neurologist Andrew Newberg and his fellow researcher, the late Eugene d'Aquili. The main question of the investigation asked is *in what way and to what extent can neuroscientists explain religious experience?*

Runehov sets off with establishing specific criteria for when an experience can be considered to be a religious one and what it means to explain something. It is important to elucidate what a religious experience is. Neuroscientists often neglect the huge diversity and richness of religion and religious experience. Many are very simplistic in their comprehension of religious experience, Persinger being one of them. Furthermore, he seems to believe that neuroscience exhaustively can explain this tremendous array of religious experiences. By distinguishing different religious experiences, Runehov actually gives neuroscientists a tool to investigate the possible neural elements (chapter 2). Then she critically analyses and evaluates the research performed by Michael Persinger. The scientific validity of the neuropsychological studies of Persinger was found to be highly questionable (chapters 3 and 4). Thereafter the same procedure is applied on the research done by Andrew Newberg and Eugene

d'Aquili. Contrary to her conclusion concerning Persinger, Runehov maintains that their neuroscientific experiment is scientifically valid but not optimally valid, (chapters 5 and 6). From these analyses and evaluations, she first explains why Persinger's way of explaining religious experiences is erroneous and why Newberg and d'Aquili's is not. Then she suggests models for how religious experiences could be explained interdisciplinary, thereby avoiding hasty reductive conclusions but instead opening for creating conditions for constructing tenable exploratory models for religious issues, (chapter 7). Her conclusion is that neuroscientists can explain religious experiences in a methodologically restricted way and to a methodologically limited extent. However, she also maintains that philosophical and theological explanations are limited by their methods. Hence, religious experiences are not sacred OR neural, but sacred AND neural, which again means that there is a quest for interdisciplinarity. Finally the book ends with some important suggestions to neuroscientists who are interested to study religious experiences by neuroimaging technology.

That she explores the positions taken by Persinger and Newberg and d'Aquili is of immediate interest. Especially Persinger's materialistic perspective needs to be highlighted because there are many other scientists and philosophers who argue in a similar way. For example, Richard Dawkins, Stephen Hawking, Daniel Dennett, Bertrand Russell, Carl Sagan, Susan Blackmore, Michael Shermer, Pascal Boyer, Patricia Churchland, all defend a materialistic worldview, some even in a fundamentalist manner. Furthermore, the view that the brain generates all of our thoughts and feelings is an underlying assumption that pervades much of current cognitive neuroscience.

In contrasting Persinger against Newberg and d'Aquili and by pointing out that with merely neuroscientific means, one cannot conclude that God exist or that God does not exist, Runehov opens for new thinking and new ways to investigate religious phenomena. According to her, Science, and not merely empirical science, needs the nourishment of Philosophy and Theology and vice versa, because academic disciplines could become too internal, seeing their research only from their own perspective. Neuroscience may certainly provide a new perspective with which to questions about religious experience, but neuroscience is not the only discipline able to do this.

Another important contribution is that Runehov addresses what is meant by an explaining something. Different disciplines may have different ways of explaining and not being aware of this may lead to hasty erroneous conclusions. Especially when interdisciplinary studies are performed this needs to be clear for all participants.

Furthermore, important is her clarification of reductionism. There seem to be many types of reductionism and, importantly, a reductionist explanation need not be a bad or narrow explanation. Instead of classifying explanations as ontological reductionist, reductive materialist, eliminating materialist, scientific reductionist, causal reductionist or methodological reductionist, Runehov, by showing how these are related to one another reduces the amount of types of

reductionism into two types: ontological reductionism and methodological reductionism. Scientific and causal reductionist explanations can be ontological reductionist if the intention is to explain something exhaustively in terms of some cause or scientific theory, but they can also be methodological reductionist if exhaustively explaining something is not the intention. Reductive and eliminating materialism are tokens of ontological reductionism. This new division surely facilitates recognizing which ways of explanations are used.

Runehov's analysis of the neuroscientific studies on religious experiences performed by Persinger, Newberg and d'Aquili carefully and systematically accomplished.

Runehov was awarded ESSSAT Research prize 2006, because in dealing with neuroscientific explanations of religious experience, Runehov addressed a topic that is both controversial and 'cutting edge'. Her analysis of two Neuroscientific research programs, by Persinger and by Newberg and d'Aquili, both of which have attracted much attention, is of interest both for scholarly discourse and for public debate. With clear definitions and carefully crafted arguments, the study makes a significant contribution to the emerging field of neurotheology. This prize was handed over at the occasion of the ECST XI in Iasi.

Dr. Iulian Rusu

SHORT CONTENT OF THE BOOK

1. Introduction

- 1.1. The Aim and Key Questions
- 1.2. Material and Method
- 1.3. Interdisciplinarity
- 1.4. Preview of the Chapters

2. Experiencing and Explaining

- 2.1 Human Experiences
- 2.2 Religious and Non-Religious Experiences
- 2.3 Psychological Experiences
- 2.4 Explaining Things and Events
- 2.5 Summary and Conclusions

3. Analysing Persinger's Research

- 3.1 God Beliefs and God Experiences
- 3.2 Neuroscientific Research
- 3.3 Persinger's Conclusions
- 3.4 Summary and Conclusions

4 Evaluating Persinger's Research

- 4.1 The Scientific Validity of the Studies
- 4.2 Religious Experiences and Epilepsy
- 4.3 Comparing Religious and Epileptic Experiences
- 4.4 Right-Handedness of Men and Women
- 4.5 Hemisphericity and Religious Experiences
- 4.6 God Experiences and Personal Crises
- 4.7 Experiencing and Types of Experience
- 4.8 Summary and Conclusions

5 Analysing Newberg and d'Aquili's Research

- 5.1 Neurological models
- 5.2 Experimental Research
- 5.3 Newberg and d'Aquili's Conclusions
- 5.4 Summary and Conclusions

6 Evaluating Newberg and d'Aquili's Research

- 6.1 The Scientific Validity of the Study
- 6.2 Comparing Experiment and Models
- 6.3 Invariant Element across the Religions?
- 6.4 Are All Experiences Equal?
- 6.5 Does Absolute Unitary Being Exist?
- 6.5 Different Thalamic Values
- 6.6 Experiencing and Types of Experience
- 6.7 Summary and Conclusions

7 Neuroscientific Explanations of Religious Experience

- 7.1 Reductionism
- 7.2 Accurately Reducing
- 7.3 Erroneously Reducing
- 7.4 Combining Explanations
- 7.5 Explanatory Models
- 7.6 Developing Newberg and d'Aquili's Model
- 7.7 Summary and Conclusions

8 Final Conclusions

- 8.1 Some Suggestions to Neuroscientists