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This book considers the consequences of the natural sciences (physics, biology, neurosciences) for our view of the world. Drees argues that higher, more complex levels of reality, such as religion and morality, are to be viewed as natural phenomena and have their own concepts and explanations, even though all elements of reality are constituted by the same kinds of matter (ontological naturalism). Religion and morality are to be understood as rooted in our evolutionary past and our neurophysiological constitution. This book takes a more radical naturalist position than most on religion and science. However, religion is not dismissed: religious traditions remain important as bodies of wisdom and vision, and the naturalist view of the world does not exclude a sense of wonder and awe, since at the limits of science questions about the existence of natural reality persist. As well as defending a particular position, Drees also includes a survey and classification of discussions on science and religion and a substantial introduction to contemporary studies on the history of science in its relation to religion.

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RELIGION, SCIENCE AND NATURALISM

WILLEM B. DREES

*Nicolette Bruining Professor of Philosophy of Science and of Technology from a
Liberal Protestant Perspective, University of Twente, Enschede, the Netherlands*



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To Zwanet Drees-Roeters

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Preface

Who shall count the host of weaker men whose sense of truth has been destroyed in the effort to harmonise impossibilities – whose life has been wasted in the attempt to force the generous new wine of science into the old bottles of Judaism? (Thomas Huxley 1894, 52)

We need to be honest to science. Through the natural and social sciences we know in considerable detail the reality in which we live, move and have our being (to adapt a phrase from Acts of the Apostles 17: 28). We should not sacrifice our sense of truth ‘in the effort to harmonise impossibilities’, nor should we waste our time on attempts to adapt new insights to old views of the world. Rather, we need to adapt our view of the world to the best available insights we have.

Emphasis on the sciences does not imply that other types of human discourse are irrelevant. Even if morality, politics, art, the love for another person, and the love of music can be understood within a naturalist framework informed by the natural and social sciences, they are still real and rich human practices. This applies to religion as well: I do not see religiously relevant gaps in the natural and human world, where the divine could somehow interfere with natural reality. The origins and functions of religions may be intelligible. However, religion can be seen as an important, real, and rich human phenomenon. Furthermore, the whole of reality is not itself understandable within a naturalist framework; in response, a sense of gratitude and wonder with respect to the reality to which we belong may be appropriate.

I do not consider an intellectual study like this one the most important thing in the world. When we stand before the divine throne on the day of judgement, if I may for the moment use this image, God will not ask ‘How did I do it?’ Rather, the question might be: ‘What did you do with it?’ With Calvin DeWitt, from whom this set of questions has been taken, I agree that issues which are within

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our responsibility, in our time especially environmental issues, are extremely urgent. However, here I will be concerned with ‘the voice that speaks’ rather than with ‘what the voice speaks’. If there is no throne in the clouds, how then should we think about God (if at all), about the world, and about ourselves in this world?

Many believers do not take the natural and social sciences seriously enough. Some do not pay any attention to the sciences at all. Among those who do, various strategies for coping with the sciences may be found in both naive and sophisticated forms. Some concentrate on gaps in our current knowledge. This strategy reinforces others in the impression that the advancement of science has to imply the retreat of religion. Others do not concentrate on specific gaps, but play down the status of scientific knowledge – a ‘scientific agnosticism’ which has to make room for religion. Then there are others who adopt a ‘scientific method’ in theology, with an elaborate formal apparatus, while avoiding engagement with scientific knowledge. Quite a few traditional and New Age believers embrace science uncritically; they run away with a mystification of quantum physics or chaos theories. And, for the moment last but not least, science may be taken seriously, but used only as a source of analogies and models, rather than as a source of knowledge about the world of which humans are a part.

I consider such responses half-hearted. They diminish the relevance of science. This becomes especially clear when we note that the sciences offer not only insights into the world, but also insights about ourselves. Not only did the world evolve – an evolution which might be seen as God’s mode of creation – but we humans, with our religious beliefs and moral codes, are the product of evolution as well. The sciences are not only about the world out there, but also about ourselves; they inform us about our constitution in relation to our environment (brains, genes, culture, etc.) and about the way this constitution and this environment became what they are through evolution. The challenge is to accommodate religious positions not merely to contemporary physics, but also to insights gained through evolutionary biology and the neurosciences, and beyond that to knowledge acquired in, for instance, cultural anthropology and comparative studies in the histories of religions. In this study the emphasis is on the natural sciences, but the impact of such social sciences needs to be taken into account. The social sciences may be less precise due to the complexity of their subject

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matter, but they complement the natural sciences in an important way, especially when human practices and beliefs are considered.

Many non-believers take science seriously, and consider this to be the end of all religion. The loss of interest in religion is, in my opinion, an impoverishment of our lives. Science is not the only, and perhaps not even the most important, factor in the declining importance of religion in the Netherlands and other Western countries. The rise of historical consciousness, respect for the plurality of cultures and traditions, and indignation with the way religious traditions have fuelled intolerance and cruelty have certainly contributed to sceptical attitudes towards religious truth claims. The decline of the importance of church membership for social careers has also contributed to indifference with respect to religion. However, even if its traditional truth claims are questioned and its social power is gone, religion may still be important as one of the factors that shape our way of life, our experiences, and our view of the world. It is to such an appreciation of the possible importance of religion that I hope to contribute.

In the first chapter of this book the central notions 'science', 'naturalism', and 'religion' will be explored, and various strategies and views of the relationship between science and theology will be considered. Chapter 2 considers some historical episodes in interactions between science and religion and evaluates views of these episodes. Then, we will turn towards theological responses to contemporary scientific knowledge of *the world* (chapter 3) and of *human nature* (chapter 4). The final chapter (5) returns to the understanding and defence of science and of religion. In the text, numbers placed in square brackets will be used to refer to sections of the book.

Proper sensitivity to disadvantages and prejudices related to gender as it has arisen over the last decades has resulted in uneasiness with respect to the use of personal pronouns when referring to humans. Rather than alternating gender by occasion or chapter, I have decided to use the female and the male pronouns for two slightly different purposes: when referring to a human as the subject who studies reality as a scientist, scholar, or theologian, I will use female pronouns, whereas I will use male pronouns when referring to humans as objects of study. Thus, when an anthropologist studies the beliefs of a tribe, I will refer to 'his beliefs' and 'her studies'. This, of course, in no way

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implies that scholars are always female or that male persons are the proper representatives of humans.

I was trained in theoretical physics at the University of Utrecht, the Netherlands. Out of interest I studied theology and philosophy of religion at the Universities of Amsterdam and of Groningen. My dissertation on theological and philosophical issues related to astrophysical cosmology was published as *Beyond the Big Bang: Quantum Cosmologies and God* (Drees 1990). Cosmology, and certainly quantum cosmology, is a peculiar and atypical branch of science, more prone to philosophical and religious speculations than most other areas of the natural sciences. I felt challenged to reflect upon the implications of more regular branches of the sciences, and especially those that impinge upon our understanding of ourselves, such as evolutionary biology and the neurosciences.

When engaged in critical discussion of other positions I sometimes feel ungrateful, as I am mostly taking things apart without being able to put all the pieces back together. I am grateful that there have been persons who dare to elaborate creative proposals and to explore their possibilities; I could not have embarked upon this project without such constructive contributions. I am thinking with gratitude especially of Robert J. Russell, my host at the Center of Theology and the Natural Sciences, affiliated with the Graduate Theological Union in Berkeley, in the Fall of 1987, and of Philip Hefner, who hosted me at the Chicago Center for Religion and Science, linked with the Lutheran School of Theology at Chicago during the Winter and Spring of 1988. Among the many others who through their constructive writings made my work possible, I mention Ian Barbour, Ralph Burhoe, Michael Heller, Nancey Murphy, Arthur Peacocke, John Polkinghorne, and Luco van den Brom, with all of whom I had discussions on various occasions, and Gordon Kaufman and Gerd Theissen, whose constructive writings I appreciate more than may be apparent from the discussion in this book.

The first draft was written during the first half of 1993 in the Center of Theological Inquiry in Princeton, a hospitable and stimulating environment sustained by the leadership of Dan Hardy. I express my gratitude to the Department of Philosophy of Princeton University, which granted me a visiting fellowship during those seven months, and especially to Bas van Fraassen, my friendly host. I also thank the

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Netherlands American Committee for Educational Exchange for giving me a grant as a Senior Fulbright Scholar.

I have had the opportunity to present earlier versions of some parts of this book in various contexts. I think with gratitude of the research conferences organised by the Vatican Observatory and the Center for Theology and the Natural Sciences (Castel Gandolfo, Italy, September 1991, and Berkeley, USA, August 1993); the conference on 'Physics and Our View of the World' organised by the Praemium Erasmianum Foundation (Oosterbeek, NL, 1992); the Fourth and Fifth European Conferences on Science and Theology, organised by the European Society for the Study of Science And Theology (Rocca di Papa, Italy, March 1992, and Freising, Germany, March 1994); lectures at the Princeton Theological Seminary and at the Chicago Advanced Seminar on Religion and Science (April 1993); two consultations organised by the Center of Theological Inquiry in Princeton (June 1993 and 1994); and meetings of the research group on knowledge and normativity of the Department of Philosophy of the Vrije Universiteit and of the working group on science and theology initiated by the Beziningscentrum of the Vrije Universiteit, chaired by Professor Maarten Maurice, a generous supporter of work on the relationship between theology and the natural sciences. I also acknowledge the importance of meetings on (socio)biology and theology organised by the Evangelische Akademie in Loccum (Germany) and the Chicago Center for Religion and Science (May, Striegnitz, and Hefner 1989, 1990), even though I did not present any material there myself. The Prins Bernhard Fonds Prize, awarded in 1992 by the Dutch Academy of Sciences in Haarlem, and the 1994 prize from the Legatum Stolpianum of the University of Leiden, both for my book on cosmology and theology, and prizes in 1994 and 1995 from the John Templeton Foundation in its programme on 'humility theology' were valuable encouragements to academic work which cuts across contemporary disciplinary boundaries.

Peter Kirschenmann, philosopher of science at the Vrije Universiteit in Amsterdam, has contributed enormously to the maturation of this book through critical questions and comments. I also thank the Department of Philosophy for accepting this thesis as a serious contribution to an important debate, even though most faculty members heartily disagreed with the position defended here. Ernan McMullin, John Cardinal O'Hara Professor of Philosophy, emeritus, of the University of Notre Dame is to be thanked not only for his

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willingness to act as referent, but also for the way he challenged and encouraged me to articulate central elements more clearly. Bas and Tina Jongeling corrected the English of an earlier version as well as some of my arguments. I am also grateful for the many other individuals who responded to drafts of various chapters, or who through discussions contributed to the development of some of the ideas presented here. With the certainty that I am omitting some persons, I recall responses by, ideas from, and conversations with John H. Brooke, Calvin B. DeWitt, S. J. Doorman, Corby Finney, Owen Gingerich, Gary Green, Niels Henrik Gregersen, Casper Hakfoort, Dan Hardy, Philip Hefner, Rob Hensen, Piet Hut, Chris Isham, Wim de Jong, Evert Jonker, Bernd-Olaf Küppers, Theo Kuipers, Huib Looren de Jong, Maarten Maurice, Cees de Pater, Arthur Peacocke, Herman Philipse, John Puddefoot, Hans Radder, Helmut Reich, Robert J. Russell, Robert Scharlemann, Bas van Fraassen, Wentzel van Huyssteen, Wim van der Steen, René van Woudenberg, Bas Verschuren, Christoph Wassermann, and an anonymous referee for Cambridge University Press.

My employer, the *Bezinningscentrum* of the *Vrije Universiteit*, graciously allowed me a leave of absence for the seven months in Princeton during which the first draft of this book was conceived, and my colleagues created the atmosphere in which I could complete the book. My closest colleagues, Bert (A. W.) Musschenga and Anton van Harskamp, have responded to drafts of sections and exerted even more influence through many incidental conversations. However, it is likely that neither they nor the board of the *Bezinningscentrum*, nor any of the persons mentioned, fully agrees with my position as developed here. While they all deserve positive credit, they all must be excused from any blame.

Last but not least, Zwanet graciously allowed me many leaves of absence, both physical and mental, taking care of our children Johannes, Annelot, and Esther, while encouraging me to complete my work. In line with the main thrust of my argument, I believe that her love and support is not less real for being embodied. This book is dedicated to her.