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IS NATURE EVER EVIL?

Religion, science and value

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Edited by Willem B. Drees

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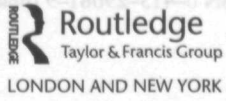
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THIS VALE OF TEARS – THE BEST OF ALL POSSIBLE WORLDS?

Willem B. Drees

Fifty slices of buttered toast were placed on the table. I pushed them over the edge one by one. Forty-nine dropped on the floor with the buttered side down. The fiftieth I saved, by eating it. This experiment raises a deep existential question:

Why does buttered toast always fall on the floor with the buttered side down?

Well, why does it? It has to do with the flip the toast makes when it is shovelled over the edge. And the flip has to do with the strength of gravity and the height of the table. To make a full turn, the table would have to be over three metres high. We would have to be about five metres tall for such a table to be useful. However, unstable bipeds as we are, we are better off not getting so tall since we would damage our heads severely when falling over. The mix of gravity (fall) and chemical bonds (risk of breaking bones) results in a maximal length for healthy bipeds of about three metres. Given the strength of gravity and electromagnetic forces (chemical bonds), a biped on any planet would face a similar fate: his (her) buttered toast will fall upside down. Thus, the answer to our question is:

Buttered toast falls upside down because the universe has the properties it has. The universe is to blame for our bad luck.

This could be taken as an example of Murphy's law, the idea that if anything can go wrong, it will go wrong. And it will do so at the place which is most difficult to access, with the parts for which you do not have spares, at a time that does not suit you at all (and so on). A couple of years ago Robert Matthews went through the details of the buttered toast problem (Matthews 1997). He concluded that there is an *anthropomurphic* principle at work; our universe is such that it is bound to generate bad luck.

By speaking of an anthropomorphic principle, Matthews implicitly criticizes those who speak of an *anthropic* principle. This refers to a far more optimistic view of our universe. Our life depends on many features of our world: the availability of a star like the Sun (and hence nuclear fusion), of a planet like the Earth with a solid crust and a protective atmosphere, of the rich variety of a chemistry based on water and organic carbon compounds, and so on. That all these conditions have turned out well says something about the universe we find ourselves in. If one were to attempt to design a slightly different universe, as a thought experiment, with gravity slightly weaker, a somewhat heavier electron, or whatever, it turns out to be quite a different universe. The universe would be so different that it would be unable to bring forth and sustain our kind of life. There seems to be a significant and meaningful correlation between our existence and the properties of the universe; we are at home in the universe. Some have moved on from such arguments to the conclusion that there must have been a creator who created the universe with these particular properties and constants of nature for the sake of the emergence of life, and especially of human life.

Two contradictory interpretations of the world as we know it. Is reality hospitable to our existence, to be appreciated as something valuable? Or is the universe a vale of tears, optimized for generating bad luck, with the emergence of humans as nothing but a marvellous accident? These two different attitudes – praising and criticizing the cosmos – can be discerned in various responses to the natural sciences: evolution as progress, as increasing complexity, but also as endless suffering, red in tooth and claw; the Second Law of Thermodynamics as the running down of a clock, bringing us to ultimate doom, or as the basis for life, for persistent order out of chaos.

In this introduction we will briefly consider four different responses by scientists, four different ways of understanding their own discipline. This will serve as a background to a preview of the chapters of this volume.

Scientists facing a hostile universe

Steven Weinberg wrote in 1977 a small book, *The First Three Minutes*, on the early stages in the development of our universe. At the end of this book he concludes that 'the more the universe seems comprehensible, the more it also seems pointless'. Whether the universe is to expand forever or will collapse again in some billions of years, ending in ice or in fire, there is no indication of a humane human destiny. Weinberg moderates his conclusion by writing in the final sentence of his book that our efforts to understand the universe, and hence the exercise of fundamental science, 'is one of the very few things that lifts human existence a little above the level of farce, and gives it some of the grace of tragedy'.

Biology too seems a fertile basis for sobering views on the meaning of existence. Richard Dawkins describes humans in his *The Selfish Gene* as survival machines, robots blindly programmed by our genes. Culture isn't much better; there we have the tyranny of 'memes', of ideas which spread like infectious diseases, not because they are right or good, but because they are contagious – and the most contagious ideas survive, just like the most selfish genes. But Dawkins too ends on the final page with a positive note. Our ability to look ahead, to simulate the future – and this is in particular the ability of the scientist – gives us the power to resist the selfish genes we are born with, and if necessary the selfish memes with which we are indoctrinated – a call to rebel against the tyranny of our genes and memes.

The biologist George C. Williams argues that reality is not just meaningless, but clearly immoral. Perhaps one might describe physical reality as indifferent, but in biology the main point of the process is to get more copies of your genes into the next generations than copies of your neighbour's genes; morally, this is to be condemned. The analogy of the golden rule in morality (to treat your neighbour the way you would like to be treated yourself) is that you ought not to cheat on your neighbour, unless you may expect to benefit from it (Williams 1997, 213f.). There is only one source of hope: the biological process is not only immorally bad, but also abysmally stupid. That gives us some room for hope; we, thanks to our intelligence, can fight evil. We ought to face the situation as it truly is and analyse the consequences of various scenarios – precisely what may be expected from scientists.

The patriarch of this attitude among scientists may well be Thomas H. Huxley, a younger contemporary of Charles Darwin. In 1893 his lecture 'Evolution and Ethics' appeared. 'Thus, brought before the tribunal of ethics, the cosmos might well stand condemned. The conscience of man revolts against the moral indifference of nature.' Moral nature may have emerged out of nature, but ought not to follow nature. Nature is a formidable opponent, but with intelligence and self-restraint we may change the conditions of existence. The same intelligence that has converted the wolf into a dog that takes care of our sheep should also be able to correct our barbarian instincts.

Authors such as these suggest that the true scientist ought to face reality as it really is, in all its hostility.

Scientists called to improve nature

Carl Sagan titled his last book *The Demon-Haunted World: Science as a Candle in the Dark*. Not only does science reveal our loneliness and the meaninglessness of the process. Science is also called upon to free us from fear by exposing various forms of animism and magical expectations. In a

world perceived as being haunted by demons, science liberates. Science is like a candle in the dark – not a merciless flashlight. Science itself is vulnerable, in need of protection. The images Sagan's title evokes are less military, less individualistic than those indicated above, even though there is also significant affinity. The focus is more pastoral, more on the care and comfort that science might provide.

Science is about *understanding* reality. For sciences such as cosmology and paleobiology (the study of fossils) understanding is by the nature of the subject the only aim. Other sciences, however, are not only about understanding but also about *transforming* reality. An archetype may be chemistry, which has its roots in the search of alchemists for the philosopher's stone and the transformation of lead into gold. Doctors seek to heal patients, engineers seek to improve the world or, at least, particular aspects of the world, such as materials, civil hygiene and transportation systems. To see the world as open to improvement suggests not only that there is no reason to be fatalistic, but also that this world is not 'the best of all possible worlds'.

Science revealing that nature is not that bad after all

Romantics tend to see nature differently. Sunlight in a forest in autumn, ice on fields in winter, the first flowers of spring, the fullness of summer: beauty can be found in all seasons. Science can testify to the grandeur of nature as well. Aren't the same forces that make the toast fall upside down also the basis of our existence? Evolution has led to the emergence of complex creatures – and hence to the flight of the eagle, the sonar of the bat, the shape of the dolphin. And to humans, who can see and observe all of this, think and talk about it, wonder about it all. In cosmology, this has been debated under the heading of the 'anthropic principle'. Even more so than among active scientists, there seems to be a longing for harmony between science and a positive, normatively loaded view of reality among the theologians, religiously interested philosophers and retired scientists who populate current debates on religion and science.

Science's neutrality

There are scientists like Weinberg who look out of the window and see how meaningless it all is. There are doctors – like Leo ten Kate, as revealed by his contribution to this volume – who out of compassion with 'victims of nature' seek to help, to relieve suffering. And there are some who, appealing to Ilya Prigogine and others, prefer a more positive understanding of the interplay of natural processes. But most scientists are arbiters who argue that the whole discussion is misguided. Science does

not rule on beauty or ugliness, good or evil. Science describes the way things are; no judgement of value is involved.

In the philosophy of science there have been various debates concerning the ideal of value-neutral science. Studies have revealed the role of cultural and political values and interests in the development of the natural sciences. As Philip Kitcher has argued in his study *The Advancement of Science*, there nonetheless seems to be the possibility of speaking of progress in science. Absolute objectivity is an illusion, but in the process of consensus formation cultural boundaries and personal preferences are left behind. Michael Ruse, philosopher and historian of biology, described this process recently in his *Mystery of Mysteries: Is Evolution a Social Construction?* That Erasmus Darwin, grandfather of Charles, opted for an evolutionary view can be understood on the basis of his social values. Charles Darwin himself was not a 'pure' scientist, though the role of data had significantly expanded. In our time there is still an interplay between cultural and other values shaping science. But over time those particular cultural values have become dominant that promote the quality of knowledge by supporting epistemic values such as consistency and coherence, precision and predictive accuracy. In that sense, one can well argue for the neutrality of professional science, not as a given but as an ambition that is being realized to an ever increasing extent.

Let us return to our central theme. The issue is not primarily whether science is neutral, but how we value our world, the reality we are part of. This question puts us squarely within the debate on world views and religions.

Creation or redemption – an issue in theology?

A brief, stylized and simplified history: despite all the horrors in the emerging cities (e.g. outbreaks of the plague), people in the Middle Ages may perhaps still have seen our world as God's good creation. Mixed feelings can be found, however, in various ages. In 1611, a time of turmoil in Europe, John Donne wrote in a poem the often quoted line 'And new philosophy calls all in doubt'. Stephen Toulmin referred to this line in his book *Cosmopolis* in order to exemplify the uncertainties created by the collapse of the social and moral order. Well over a century later, in 1755, Voltaire wrote a poem on the earthquake that destroyed Lisbon (see Sanides-Kohlrausch in this volume), which he subtitled 'an investigation into the axiom "All is well"'. The theme returns in his novel *Candide ou l'Optimisme* (1759). The more philosopher Pangloss argues that this world is the best of all possible worlds, the less convincing his case becomes. Another example, a further century later, can be taken from Dostoyevski's book *The Brothers Karamazov*. One of the brothers wants to return his

ticket for heaven. Earthly suffering is not justified by any heavenly reward or meaning.

Such changes in the appreciation of our world have had their consequences for theology. This is most explicit with respect to theologians who have abandoned the theistic concept of God as the divine King who created this world and rules over it day and night. Instead, they seek to articulate an understanding of God as the companion of those who suffer, of the poor. The 'death of God' debate in the 1960s has to do with a greater emphasis on human autonomy, but also with an increased sensibility to cruelty and suffering in this world.

In theology, this is not a new debate. The first – and arguably most significant – heretic of Christian history was Marcion, in the second century CE. He stressed the tension between the idea of God as the creator of this ambivalent world and God as the loving father of Jesus Christ. Whereas the Creator has a proportional sense of justice (an eye for an eye), the father of Jesus Christ is associated with grace and forgiveness. Marcion concluded that the biblical stories are about two different gods – a Creator and a Redeemer. The Christian tradition has rejected this; confessional statements affirm again and again that God as known via Jesus is the Creator of heaven and earth. In medieval theology the continuity of nature and grace was a common assumption; God's grace does not abandon nature but perfects it. The protestant reformers had more hesitations about this continuity; their theology is more coloured by the tension between nature and grace, between this world and the world to come; a contemporary reflection of such theological differences can be discerned in this volume in the response by Martien Brinkman to Keith Ward. One consequent articulation is that God's grace is not to be found in nature – as when Dietrich Bonhoeffer writes in his letters from prison that we ought not to look for God in the limitations of our knowledge. We live in a secular world, a world in which God is not manifest – but in this world we live before God. We are left with a radical sense of responsibility because we have been set free.

Religion and science

What consequences may there be from this diversity of opinions on reality and value for current discussions on religion and science? Conferences, books and projects often seem to be aimed at *causal* issues. Is it possible to speak in a sensible way of divine action in the world as we know it? Is there any divine involvement in the first instance, referred to as 'the Big Bang', or throughout the processes that shape and constitute our world, say in quantum indeterminacy or the flexibility of chaotic processes? Does the complexity of the living cell emerge spontaneously, or is there a need for guidance? Some debates do not so much focus on divine involvement

as on human identity: is our behaviour merely a consequence of genes and circumstances? Is morality nothing but a veiled and subtle form of self-interest, and hence egoism? Is there anything 'else' involved in religious experience, or is it projection?

The *appreciation* or valuation of reality is considered far less explicitly in debates on religion and science, even though it is implicitly present in concepts of God assumed. This issue, of our various valuations of the world and their relation to science, is central to this volume.

Is nature ever evil? A preview of this book

This volume results from a conference held at the Vrije Universiteit in Amsterdam, October 23–25, 2000, organized by the Beziningscentrum of the Vrije Universiteit in collaboration with Dr. Antje Jackelén of the CTNS Science and Religion Course Program in Europe and sponsored also by the Council for the Humanities of the Netherlands Organization for Scientific Research (NWO). The title of the conference in Amsterdam was 'Is Nature Ever Evil, Wrong, or Ugly? Neutrality and Engagement in the Scientific Study of Reality'. There were eight invited contributors (resulting in most of the substantial essays in this volume), each followed by responses, often from the faculties of the sciences, theology and philosophy (resulting in various brief comments in this volume), and workshops with, mostly, younger scholars contributing.

The central question, 'Is Nature Ever Evil?', triggered a variety of reflections. The first part of the book, 'Nature, science and value', considers some fundamental issues regarding our concept of nature and our view of the contribution science might make. In the first essay the philosopher Mary Midgley takes to task scientific critics of the cosmos. Other essays in this section question and explore various methodological issues relating to moral pronouncements regarding the nature of reality.

The second part opens with an essay by the philosopher Holmes Rolston, arguing (to summarize it all too briefly) that evil is an intrinsic part of any reality that is interesting; creation is 'cruciform'. Subsequent contributions in this part explore similar issues concerning the justification for belief in the ultimate goodness of reality in the light of catastrophic processes in reality.

Central to the third part are the essays by the historian John Brooke and the theologian Philip Hefner. Brooke surveys discourses on 'improving nature', which implicitly suggest that nature is not as good as it could be. Hefner moves further on in a theological exploration of the 'human co-creator', assessing the active role of humans in creating culture and technology. Other essays respond to their contributions and delve into particular issues of health and disease, the drive for perfection, and technology.

The final part begins with an essay by the theologian Keith Ward, arguing for the co-existence of explanations in terms of physical processes and in terms of personal intentions and values, and hence for the irreducibility of a theistic understanding of our world. The geneticist and Episcopalian priest Lindon Eaves deals extensively with current research in behavioural genetics and its consequences for our understanding of human nature, including the normative dimension we experience, and thus brings us to ask how the 'ought', the values embedded in religious and humanist traditions, is related to the 'is' of the processes uncovered by science. As the title of this section asks 'Values as explanation or values explained?', the essays here raise the issue of whether a theistic theology with its value-laden notions of purpose and intention offers a framework for understanding 'reality, science and values', or whether reality as seen through the sciences is the framework through which we can understand our values.

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