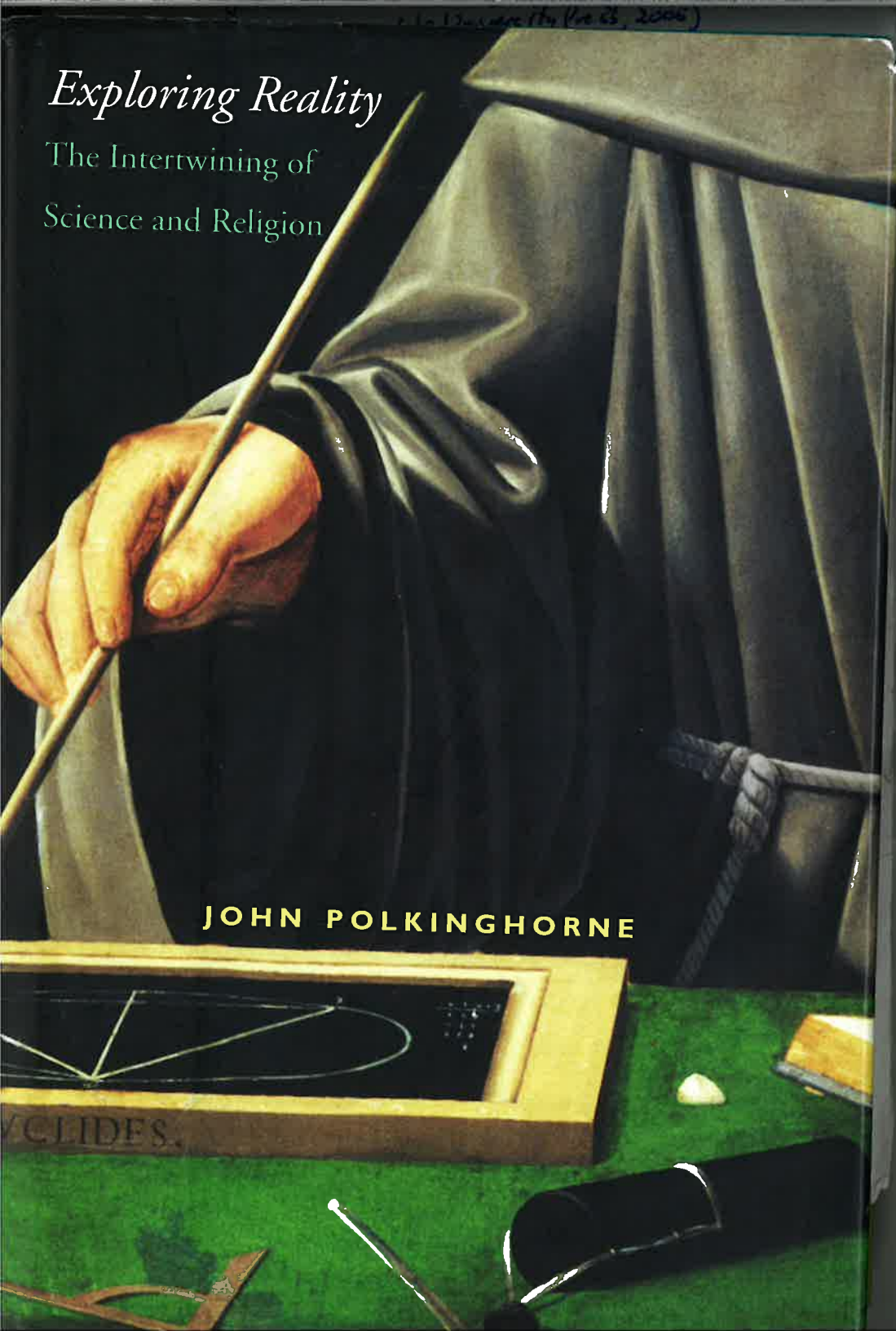
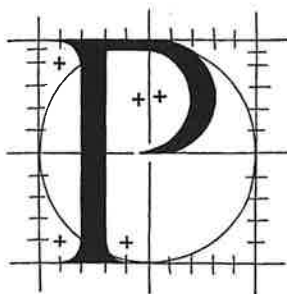


Exploring Reality

The Intertwining of
Science and Religion

JOHN POLKINGHORNE



Evil

PHYSICISTS are deeply impressed by the rational order and inherent fruitfulness of the universe.¹ Many, even among those who are not adherents to any faith tradition, incline at least to a kind of cosmic religiosity of the sort that Albert Einstein expressed when

he wrote of 'a feeling of awe at the scheme that is manifested in the material universe'.² Hence the quite frequent, almost instinctive, recourse to the use of 'Mind of God' language when people working in fundamental physics write books for the general public.

Biologists are different. Quite commonly they display hostility towards taking any serious account of religious ideas or language. There are at least three reasons why this might

1. See J. C. Polkinghorne, *Science and Creation*, SPCK, 1988, chs 1 and 2; *Belief in God in an Age of Science*, Yale University Press, 1998, ch. 1.

2. H. Dukas and B. Hoffmann (eds), *Albert Einstein: The Human Side*, Princeton University Press, 1979, p. 70.

be so. One is the unfortunate legacy of disputes over Darwin's evolutionary ideas, lingering even today in the circles of 'creationism' (so-called). We have seen already in chapter 3 that the denial of evolutionary understanding is no matter of necessity for Christian theology. In fact, quite the reverse, since respect for the truth requires Darwin's insights to be taken with appropriate seriousness. Nevertheless, the memory of some of the religious mistakes of the past lingers on in the biological community, particularly among those who take no trouble to find out what contemporary theology actually has to say.

Second, placing an extraordinary degree of overconfidence in science's unaided power to gain understanding can lead some biologists to make grossly inflated claims that their insights are capable of explaining pretty well everything. Many physicists were in this kind of grandiose mood in the generations that followed Isaac Newton's great discoveries, but the later discernment of the complex subtlety of physical process eventually led that community to a more humble recognition that mechanism is not all. Man is more than a machine. Yet biologists today, in the wake of their stunning discoveries in molecular genetics, are all too prone to a euphoric degree of unjustified triumphalism that grossly exaggerates the explanatory power of their discipline. I feel sure this is a temporary episode that will not survive a recovery of full biological interest in organisms as well as in molecules.

Yet there is also a third reason for biological reserve about religion, which is of a much more serious kind. In contrast to the austere perspective of the physicists, biologists view a scene that is much more messy and ambiguous in its character, with a mixture of fruitfulness and waste, of promise

and pain. The truth-seeking explorer of reality must take this last issue with the utmost seriousness.

Of all the difficulties that hold people back from religious belief, the question of the evil and suffering in the world is surely the greatest. Narrowing the focus from nature to humanity only intensifies the issue, as the long history of war, exploitation and persecution is then brought into the perspective. How can such a world be considered to be the creation of a God who is both all-good and all-powerful? The statement of the problem is too familiar and troubling to need extensive elaboration. Not only does it give considerable pause to the enquirer after theism, but it is also one that remains a perpetual challenge and source of perplexity for those of us who are believers.

There are two different kinds of evil that need to be considered. Moral evil arises from human choices that lead to cruelty, exploitation and neglect. Natural evil arises from events outside human control, such as the incidence of disease and disaster. There is not always a clear-cut division between the two. Shoddy building practices can considerably enhance the destructive effects of earthquakes. Unjust treatment of the poor reduces their condition to an impoverished state of enhanced vulnerability to epidemics. Human lifestyle choices, such as heavy smoking, can lead to tragic early death through cancer. Yet, while the responsibility for moral evil seems to lie with human beings, ultimately the responsibility for natural evil appears to lie at the door of the Creator.

The attempt to justify the ways of God in the face of the actuality of evil is called theodicy. It is a task of considerable importance and difficulty for theologians. It is clear that the perplexities that are raised are not ones that are capable of

being dispelled simply by a few paragraphs of clear-thinking prose. They are as much existential as logical and they lie very deep. Christian thought over the centuries has followed one of three basic strategies.

The first is one that the advance of science has made untenable for us today, although it was treated as very significant in the early Christian centuries. A plainly literal reading of Genesis 3:14-19 (the words of God to Adam and Eve and the serpent in the mythic story of the eating of the forbidden fruit and its aftermath) led to the idea that the Fall, understood as the original act of moral evil, also resulted in a curse upon creation that was the actual source of natural evil. Paul appears to write within this kind of understanding when he speaks of Adam as the one through whom sin came into the world 'and death came through sin' (Romans 5:12). It is obvious that our knowledge of the long history of life, with the mass extinctions that have punctuated it, does not permit us today to believe that the origin of physical death and destruction is linked directly to human disobedience to God. However, if we understand the story of the Fall to be the symbol of a turning away from God into the self that occurred with the dawning of hominid self-consciousness, so that thereby humanity became curved-in upon itself, asserting autonomy and refusing to acknowledge heteronomous dependence, we can today interpret those words in Romans in the sense of referring not to fleshly death but to what may be called 'mortality', spiritual sadness at the transience of human life.³ Because of their self-conscious power to look ahead into the future, our ancestors had become aware that they would die. This was an emergent recognition

3. J. C. Polkinghorne, *Reason and Reality*, SPCK/Trinity Press International, 1991, ch. 8; *Belief in God*, pp. 88-9.

of something always present, namely the finitude of life in this world. Christian belief embraces the idea that God's purposes will find their ultimate fulfilment beyond present history in the everlasting life of the world to come, but the Fall meant that our ancestors had become alienated from the One who is the only true ground of hope for that *post mortem* destiny. Hence their feeling of the bitterness of mortality, an experience in which we also share, for we are the heirs of that fractured relationship with our Creator. This modern interpretation of the Fall and its consequences conveys an important insight into the human condition, but it does not, in itself, offer us a resolution of the problem of evil.

The second strategy of theodicy is an attempt to deny the absolute reality of evil. It is claimed that evil is no more than a kind of deprivation, the absence of the good rather than the substantial presence of the bad—rather as darkness is simply the absence of light. (There are photons, particles of light, but there are no scotons, particles of darkness.) After the terrible events of the twentieth century this seems to me to be an impossible stance to adopt. In fact, when one considers an appalling episode like the Holocaust, though one can see individual and societal factors at work (the implacably evil will of powerful leaders; a society in which an unquestioning obedience to the State had been strenuously inculcated; ordinary human cowardice that meant that people looked the other way when the cattle trucks laden with their human cargo rumbled through the village railway station on the way to Auschwitz), nevertheless there is a weight of evil involved in these dreadful events that makes me, at any rate, not quick to be dismissive of the possibility that there are also non-human powers of evil loose in the world. If that is so, it does nothing of itself

to resolve the problems of theodicy, since the question of how these satanic powers originated, and why they are permitted to continue, remains deeply troubling. Whatever view one takes about the nature of spiritual evil, it seems that evil's reality is just too great to be argued away as simply the privation of the good. Yet, having acknowledged that, the light/dark comparison does serve to remind us of the existence of very much positive good in the world, so that the problem of evil has to be held in tension with the 'problem' of the existence of value and good. The world is both beautiful and ugly, inspiring and terrifying in turn.

The third strategy of theodicy is the one followed by most contemporary theologians. It seeks to make out a case that the evils that occur are the necessary cost of greater goods that could be attained in no other way and which more than redress the balance of creation in God's favour. According to this view, the dark side of creation is the unavoidable shadow that is inseparable from its goodness. In relation to moral evil, this argument is summed up in the well-known free-will defence: a world with freely choosing beings, however bad some of their choices may prove to be, is a better world than one populated only by perfectly programmed automata. This is not a claim that can be made in this post-Holocaust era without a quiver in the voice. Nevertheless, I believe that there is important truth here. We instinctively recognise that acts that seek to manipulate and restrain a person's freedom of action, even when undertaken with desirable intentions, such as various acts of restraint laid upon potential or actual offenders in order to avoid permitting the infliction of harm, are in themselves acts of imperfection, in that they diminish the humanity of those on whom they are imposed. Philosophers

argue whether or not it would have been possible for God to have created beings who *freely* and *always* choose the good. There does seem to be a paradox in this notion. Yet there is also a problem here for Christian theology, since its understanding of the life of the world to come is precisely that it will have such a character of unremitting persistence in the good. I believe that the invulnerability of heaven to subversion through a second Fall arises from the fact that the unveiled presence of God, there revealed as the source of all good, will elicit a full and free acceptance of the divine will.⁴ There is clearly a difference in moral status between initial imposed necessity and eventual voluntary acceptance.

But, if that is a correct view concerning the resurrection life of the new creation, why should a clear manifestation of God's goodness not be made also in the course of the life in this world, rather than waiting until the next? Putting it bluntly, why does not God make the divine will and win some nature absolutely clear right now, that is, as soon as possible? I believe that the answer lies in the recognition that God's creative purpose is necessarily a two-step process. The first step is this present creation, existing at some epistemic distance from its Creator, whose divine presence is currently veiled from our sight. If there is truly to be an exercise of creaturely free-will, this seems to require such an initial distancing from the overwhelming presence of the divine. An initial veiling of the full revelation of God's infinite nature seems necessary if finite creatures are to be allowed a true freedom to be themselves. It is only after a free decision has been taken

4. J. C. Polkinghorne, *The God of Hope and the End of the World*, SPCK/Yale University Press, 2002, p. 134.

to renounce the illusion of human autonomy and to embrace the reality of heteronomy that the nature of God can progressively begin to be revealed with greater clarity and without forcing the individual. The encounter of the finite with the Infinite has to come about by stages.

A somewhat similar appeal to the necessity of a distance between the Creator and creation can be made in relation to the problem of natural evil. Rather than this world being a ready-made divine puppet theatre, we have seen that its character of being the home of an evolving process can be understood theologically as showing it to be a creation in which creatures are allowed 'to make themselves'. This seems indeed to be a great good, but it also has a necessary cost. As the generations succeed each other in the course of evolutionary process, death is seen to be the prerequisite of the possibility of new life. The history of the shuffling exploration of potentiality will inevitably have its ragged edges, for there will be developmental blind alleys and extinctions, as well as unfolding fertility. Another way of putting the point is to frame what I have called 'the free-process defence':⁵ all of created nature is allowed to be itself according to its kind, just as human beings are allowed to be according to our kind. As a part of such a world, viruses will be able to evolve and cause new diseases; genes will mutate and cause cancer and malformation through a process that is also the source of new forms of life; tectonic plates will slip and cause earthquakes. Things will often just *happen*, as a matter of fact, rather than for an individually identifiable purpose. The question so often asked of a minister by those who are in great trouble, 'Why is this happening to

5. J. C. Polkinghorne, *Science and Providence*, SPCK, 1989, pp. 66-7.

me?', may sometimes have no answer beyond the brute fact of occurrence.

Science can offer some help to theology here in support of the necessary cost of a world allowed to make itself. We tend to think that had we been in charge of creation, frankly, we would have done it better. We would have kept all the nice things (fruitfulness and beauty) and got rid of all the nasty things (disease and disaster). However, the more science enables us to understand the nature of evolving fertility, the more we see that it is necessarily a package deal, an integrated process in which growth and decay are inextricably interwoven as novelty emerges at the edge of chaos. The ambiguous character of genetic mutation, both the engine of evolutionary fruitfulness and the source of malignancy, illustrates the point.

A theologian would say that what is involved in the occurring costliness of creation is the divine permissive will, allowing creatures to behave in accordance with their natures. Bringing the world into being was a kenotic act of self-limitation on the Creator's part, so that not all that happens does so under tight divine control. The gift of Love in allowing the genuinely other to be is necessarily a precarious gift. I believe that God wills neither the act of a murderer nor the incidence of an earthquake, but both are allowed to happen in a creation given its creaturely freedom.

There may seem to be something very bleak in such a conclusion, but I think that it represents the necessary primal reality of a world not yet fully integrated with the life of God. The free-will and free-process defences are just two sides of one coin, the cost of a world given independence through the loving gift of its Creator. The two insights are

also linked by the fact that the possibility of the morally responsible exercise of free will depends upon its taking place in a world of sufficiently stable integrity that actions can have foreseeable consequences. The ethical imperative of care for others would become meaningless if God could always be relied upon for magical interventions to save people from the bad consequences of human carelessness and neglect.

In making arguments about theodicy, the Christian has to exercise great discretion in appealing to the life of the world to come. A facile invocation of future good as the means of explaining away present ills can be insensitive and unconvincing. In Dostoevsky's novel, Ivan Karamazov was right to insist that it is not acceptable simply to regard the intense suffering of a boy, painfully and unjustly put to death, as the justified price for bliss to come. That kind of transactional argument, simply stated on its own, is callous and immoral. But it is still true that the boy's fate is yet more tragic if he has no destiny beyond his terrible death. Whatever value the insights of theodicy may have, they are a kind of interim judgement on present process, and the theological account is incomplete unless it is perceived also to affirm the eschatological hope of the ultimate absolute triumph of good over evil. The first step of God's creative activity represented by this present world is indeed a precarious venture, and it needs for its final fulfilment and justification the second step of God's redeemed new creation. The cry *O felix culpa!* expresses the belief that nothing is beyond God's final power of rescue and renewal.

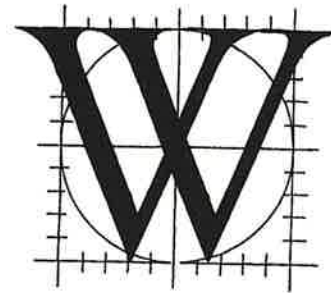
Part of the problem of evil is simply its scale. Some degree of danger and struggle could be seen as providing a challenging spur to growth and development, but too often suffering seems only to diminish or extinguish the humanity of

those on whom it falls. There is a mystery here that will not yield simply to rational analysis. In reality, the problem of evil is too profound to be dealt with adequately by any form of moral bookkeeping, as if one were simply casting up creation's ethical profit-and-loss account. Much of the discourse of philosophers on this issue, whether of theistic or atheistic stripe, is too coolly detached to carry much conviction.⁶ The precise quantification of evil is a highly problematic notion, even if one can see that there are greater and lesser ills.

Ultimately, responding to the surd of tragedy requires the insights of the poet more than the arguments of the logician. I have already indicated how important for me is the passion of Christ, understood as divine participation in the travail of creation (p. 98). Here is a point unique to Christianity, with its trinitarian and incarnational understanding of the nature of God. One might dare to say that the burden of existential anguish at the suffering of the world is not borne by creatures alone, but their Creator shares the load, thereby enabling its ultimate redemption. Christianity is a religion that often calls for the acceptance of suffering, in contrast to the Buddhist counsel to flee suffering, and it does so because it can speak of that acceptance as a participation in the sufferings of Christ (1 Peter 4:12-19). The Christian God is the crucified God, not a compassionate spectator from the outside but truly a fellow sufferer who understands creatures' pain from the inside. Only at this most profound level can theology begin truly to engage with the problem of the evil and suffering of this world.

6. See, for example, E. Stump and M. J. Murray (eds), *Philosophy of Religion: The Big Questions*, Blackwell, 1999, pp. 151-262.

Ethical Exploration: Genetics



RESTLING with the problems of good and evil takes two forms. One is the general, and often seemingly rather abstract, consideration that concerned us in the preceding chapter. The other is the more concrete endeavour to reach right ethical conclusions about decisions at the level of individual and societal responsibility exercised in specific situations. This chapter presents a particular case study of a set of ethical issues that arise from recent scientific and technical advances.

Science gives us knowledge, a gift that is surely always welcome as providing a better basis for decisions than ignorance. But then science's lusty offspring, technology, uses that knowledge to give us power, the ability to do things not previously thought to be possible. This is a more ambiguous gift, since not everything that can be done, should be done. There-

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*To my colleagues in the International Society
for Science and Religion*