

**RON ELSDON**

## **A Still-bent World: Some Reflections on Current Environmental Issues**

---

*Long-standing and newly-emerging issues in **environmental management** continue to pose threats to the continued well-being of humanity and the rest of the created order. After a welter of secular and Christian publications in recent years, reflection suggests a number of particular questions requiring consideration in the context of a biblical theology which encompasses **creation, fall and redemption**. These questions include issues to do with the nature of the scientific process, the prediction of **future trends**, and the problems of **risk analysis**. This approach offers the opportunity for Christians to engage in dialogue with others involved in decision-making at a time when governments are increasingly sensitive to public concern over environmental problems.*

---

The purpose of this article is not to list the environmental problems we face. Another approach is suggested by reflection on the current state of technological expertise in environmental management coupled with the experience of recent disasters, and uncertainty over the long-term consequences of some current practices. I hope to single out the particular questions which must presently be faced, and to see how Christians can contribute towards answering them effectively.

A Christian response to environmental issues must start from a considered theology of creation. The more difficult part of the task is to go on to address urgent practical questions from a biblical point of view; only when this task is successfully accomplished can we make a contribution that will engage the wider community which may not embrace any Christian convictions.

Before considering the biblical material another question arises: why are environmental issues so prominent today? The Church of England Report *Our Responsibility for the Living Environment* suggests two reasons.<sup>1</sup> First there is a human-centred concern for aesthetic satisfaction. People wish to enjoy the beauty of the world.

---

<sup>1</sup> General Synod Board for Social Responsibility, *Our Responsibility for the Living Environment*, London, England (1986).

Secondly, there is a belief that nature too has rights. This section of the Report may have overlooked a stronger reason—that people are now afraid of the short- and long-term consequences of environmental malpractice. Although problems such as pollution have repeatedly surfaced over at least two millenia, its scale is now such as to threaten the well-being of the whole planet. So, while individuals have been calling attention to the threats for many years, the issues are now so great that the response has become international, finding concrete expression, for example, in the 1987 European Year of the Environment. As a result, more individuals than ever before are concerned, and children learn about environmental care from primary school onwards. If fear of consequences is a major motivating force, it is likely that environmental concern will wane whenever the major threats are seen to recede, or as soon as some larger threat to human well-being appears. Christian convictions on these issues ought by contrast to prove more long-lasting.

### **Blaming Christianity**

Another level on which Christians are challenged on environmental matters is the oft-repeated charge that exploitation of nature is rooted in a Judaeo-Christian ethic. This has often been discussed, and no further general refutation is attempted here. However, the accusation has resurfaced in modified form in a recent article by the Roman Catholic theologian Robert Faricy. He believes that an exploitative modern attitude towards nature has its roots in the theology of the Reformation, especially Luther's two-kingdom theology. The following words summarise his thesis:

Reformation protestantism, in its conceptions of the two kingdoms and of fallen human nature, has separated the order of creation from the order of redemption. The order of creation, including all of nature, stands—corrupt and sinful—under God's wrath. This negative view of nature calls for aggressivity on man's part to make nature a good slave.<sup>2</sup>

It would take too long to deal with Faricy's thesis in detail here, but it immediately seems simplistic, ignoring, for example, the industrial practices of non-Christian Japan. But it does demonstrate that parts of the Christian church are still being blamed for current environmental problems, and there is still an apologetic task to be undertaken.

---

2 R. J. Faricy, 'The Person-Nature Split: Ecology, Women and Human Life', *Irish Theological Quarterly* (1988), 53, pp. 203–218.

Whether Christians are seeking to defend their world-view against criticisms of environmental mismanagement, or to make a positive contribution to the current issues which so many are concerned about, the bible provides a wealth of material on which to base an understanding of the natural world and how to manage it. Some of this material is presented below under a number of thematic headings.

## **1. The Goodness of Creation**

Theologians have differed over the importance of creation as a theme in Old Testament theology, mainly because the creation narratives are not often referred to elsewhere. What is important, however, is not the number of references, but the position of Genesis 1–11, forming as it does a prologue to the history of Israel. Thus Walther Eichrodt states:

By making possession of the land dependent upon faithfulness to the covenant God includes man's relation to Nature within the sphere of responsible human behaviour, and impresses upon him his distinctive position in the world of creatures. His sins means that the land is defiled, and the same land will vomit forth the nation which has become untrue to its moral responsibility.<sup>3</sup>

This implies that the creation account in Genesis is not to be read in isolation, but in the context of the history which follows. We now aim to show how this can help to develop a theology of creation applicable to the present day which is as practical as it is biblical. For this purpose there is no need to debate the method or time-scale of creation. Christians must assert it as a fact.

The fact that God created everything 'good' and that when creation was finished it was 'very good' is undoubtedly one of the main themes of Genesis 1. What is not so clear is the precise meaning of the term 'good'. Reflection on the text suggests at least four different aspects to this:

### ***a). The Idea of Purpose and Correspondence***

In vs. 11f. the creation of plant life is described, and vs. 29f. show that God's purpose was to provide food not only for humanity but also for all animate life. In this context, the 'goodness' of creation means that what God purposed for creation it was able to fulfil. Theologians such as Westermann are surely right to see in Genesis 1 a polemic against contrary Ancient Near East world views in which heavenly bodies

---

3 W. Eichrodt. *Theology of the Old Testament*, volume 2, London, England (1967).

such as sun, moon and stars were themselves deities which could often be hostile to humankind.<sup>4</sup> This kind of polemic surfaces again elsewhere in the Old Testament:

The Lord watches over you;  
 The Lord is your shade at your right hand.  
 The sun will not harm you by day  
 Nor the moon by night. (Ps 121:5)

Israel was later promised 'a land flowing with milk and honey', and some of the laws under which God directed them to live were concerned with a responsible dominion over that land. Leviticus 25, for example, sets out the laws of sabbath rest (vs. 1-7) and of Jubilee (vs. 8-24). The former pronounces a year 'of solemn rest', in which there was to be no sowing of land or pruning of vineyards; the latter stipulated the same, together with a return of bought parcels of land to their original owners. The reasons given are theological, reflecting the ultimate ownership and authority of God (vs. 2, 4, 17, 23); but the phrase 'so you will dwell in the land securely' (v. 18) clearly points to the environmental and economic implications of the theological statement.<sup>5</sup> We now know that there is more value in leaving land fallow than is explicitly stated in the bible.

It is consistent with the logic of the Old Testament message that famine, sin and judgement were inextricably linked (e.g. Haggai 1). Similarly, modern famines are not the result of shortcomings in creation: they are due to agricultural malpractice, climatic changes which are at least in part due to atmospheric pollution, and a failure to distribute food equitably.

**b). *The Idea of Beauty***

It is sometimes suggested that the Hebrew word which is translated as 'good' (*tôb*) encompasses the idea of beauty. This is not explicit in Genesis 1 but there is a hint of the idea in Ezekiel's lament for the King of Tyre (28:11-19):

You were the signet of perfection,  
 full of wisdom and perfect in beauty.  
 You were in Eden, the garden of God;  
 every precious stone was your covering . . .  
 On the day that you were created  
 they were prepared.

4 C. Westermann, *Creation*, London, England (1974).

5 C. J. H. Wright, 'Living as the People of God', Leicester, England (1983); V. Samuel and C. Sugden, 'A Just and Responsible Lifestyle—an Old Testament Perspective', in

The fate of the king is starkly portrayed by describing him in terms of God's initial acts of creation (cf. Ezek 28:17). Perhaps an even stronger hint comes in Ezek 31:8 where Egypt is described as having had a beauty greater than any tree 'in the garden of God'. It is noteworthy that here, and in other references in the book of Ezekiel, the idea seems to be that of a beauty which has been lost (e.g. 16:14; 27:3, 4, 11).

**c). *The Idea of Variety***

The Genesis 1 account of creation lists the different types of life God created, possibly in order to highlight the sheer teeming diversity of it all (cf. Ps 104:24f.). This concept of variety is not simply to do with numbers of items such as in a catalogue or a museum; it is more to do with inter-relatedness. Thus Genesis 1.29–30, in showing how plant life is meant to provide food for all, implies that the continued well-being of humanity, animals, fish, birds and plants are interdependent. The oneness of humanity with the rest of the created order is stressed in Genesis in other ways. Their capacities for reproduction are described in the same way (cf. 1:22 with 1:28), and they eat the same kinds of food (cf. 1:29 with 1.30). In 2:7 the formation of man from the dust of the ground makes the same point. Keith Innes has shown the important contribution the created order made to Israel's spirituality as expressed in the Old Testament.<sup>6</sup> Thus the diversity of living matter on earth is not merely a man-centred utilitarian matter.

**d). *The Idea of Witness***

The created order bears the stamp of its Creator. Again this idea is not implicit in Genesis, but is confirmed elsewhere, particularly in the psalms:

The heavens declare the glory of God;  
the skies proclaim the work of His hands. (Psl 19:1)

While science and philosophy have long debated exactly how this can be perceived, the bible takes it for granted. At the beginning of Romans Paul takes up the same theme:

For since the beginning of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that men are without excuse (1:20).

---

R. Sider (ed), 'Lifestyle in the Eighties: An Evangelical Commitment to Simple Lifestyle', Exeter, England (1982).

<sup>6</sup> K. Innes, 'The Witness of Nature: an Old Testament contribution to Christian Spirituality', *New Fire* 8, pp. 418–420.

Although this has sometimes been taken as the starting point of an elaborate 'natural theology' akin to that of the Greek philosophers, some commentators have demonstrated that Paul's point here is totally different. While his Greek contemporaries believed that through reflection on the creation people could move towards an understanding of the Creator, Paul argues that this is impossible in practice, because men have rejected this revelation so that their minds are darkened and God is hidden from them (cf. Eph 4:24).

These differing strands in a biblical understanding of the goodness of creation challenge current assumptions about the earth on which we live. If we confine ourselves to the idea of purpose and correspondence, our view of creation becomes very man-centred and utilitarian—a criticism once made of my book *Bent World*.<sup>7</sup> This criticism has in the past been levelled against the teaching of the churches. Keith Thomas cites examples from earlier centuries in which this approach was carried to remarkable lengths, by stressing in a one-sided way how different humanity is from the rest of creation. Thus, according to one early Stuart doctor:

Man is of a far different structure in his guts from ravenous creatures as dogs, wolves, etc., who, minding only their belly, have their guts descending almost straight down from their ventricle or stomach to the fundament: whereas in this noble microcosm man, there are in these intestinal parts many anfractuons circulations, windings and turnings, whereby, longer retention of his food being procured, he might so much the better attend upon sublime speculations, and profitable employments in Church and Commonwealth.<sup>8</sup>

The other strands broaden considerably the biblical understanding of creation. If beauty is inherent in the goodness of creation, then we move away from a utilitarian approach to one encompassing the aesthetic. The inter-relatedness of all kinds of life is the 'flip side' of a coin whose head is the divine commission to rule over the rest of creation (see next section). The two aspects have to be held in tension, with due emphasis given to their context, in order to do justice to revealed truth—as with other complex ethical issues. When another dimension is added—the witness of creation to its Creator—then we reach a position in which the goodness of creation is independent of the human presence. All these factors conspire to challenge human

---

7 R. Elsdon, 'Bent World', Leicester, England (1981).

8 K. Thomas, 'Man and the Natural World: Changing attitudes in England 1500–1800', London, England (1983).

beings with the need for humility. One of the great biblical sins is pride (why did Adam and Eve wish to be independent of God?), and as David Lyon has pointed out, even in Genesis pride goes hand-in-hand with technological achievement (e.g. Gen 11:4).<sup>9</sup>

## 2. Man and Woman in the Image of God

This theme from Genesis 1 has triggered as much speculation as any other part of the bible. While precise ideas have often been advanced as to which part of human make-up constitutes the divine image, some commentators have pointed out that the scriptures themselves are never very specific on the subject, and that the Hebrew view of the unity of human life militates against isolating some such component.

The view is currently gaining acceptance that the human image of God is to do with the capacity for a relationship with God. Also increasingly appreciated is the way in which the image is linked with God's command to take dominion over the created order (see also Psalm 8), and thus has a moral dimension (cf. Col 3:10). While simply to equate the image with the capacity for dominion in Genesis 1 is an exegetical mistake, it is clear that the concepts of image and dominion *do* go together—the second is the consequence of the first. This point cannot be made strongly enough, for its implications are far-reaching. It follows that human dominion over the rest of creation cannot be dismissed as a purely scientific matter, and that however far technological advance takes us in realising that dominion practically, this is only one piece of the jigsaw. It is intended to be one expression of our being in God's image—morally and relationally.

The advent of nuclear power is one example. Twenty years ago there were many who saw it as the cheap, safe and clean energy source of the future. But even then one of the greatest proponents of nuclear power, Alvin Weinberg, wrote:

But the price that we demand of society for this magical energy source is both a vigilance and a longevity of our social institutions that we are quite unaccustomed to.<sup>10</sup>

Since those words were written two major nuclear accidents have taken place. Each shows that the human factor becomes more

---

9 D. Lyon, 'Tubal-Cain and High Tech: Technology in a Biblical Perspective', *Christian Arena* (1987), 40, pp. 2–5.

10 J. Francis and P. Abrecht (eds), 'Facing up to Nuclear Power', Edinburgh, Scotland (1976).

important with increasing technological sophistication. Each also illuminates the biblical truth that the divine image is as much to do with responsibility as with power. Mankind is responsible to God for the management of a good creation.

### 3. The Consequences of the Fall

The account of the Fall in Genesis 3 also has profound implications for our understanding of environmental problems. Here we focus on three particular aspects of the events in the garden.

1. There is the fact of what motivated the first act of disobedience:

When the woman saw that the fruit of the tree was good for food and pleasing to the eye, and also desirable for gaining wisdom, she took some and ate it. She also gave some to her husband. (3:6)

Here sin is portrayed in the starkest possible terms—as a positive attitude of rebellion which seeks to be independent of God. Rowland Moss has pointed out that the created order features in the lead-up to the fall in two important ways: first, the moral test (or, alternatively, the one restriction put on the range of activity open to the man and the woman) is to do with their relation to the created order—a tree whose fruit is forbidden them. Secondly, although there are many different interpretations of the significance of the serpent, it is from the created order that temptation comes to the woman.<sup>11</sup> Thus it is consistent with the unity of the narrative that the consequences of the fall later in the chapter are described in terms of a corrupted relationship with the creation.

While a number of different terms and concepts are subsumed under the biblical concept of sin, that of disobedience is as important as any, and its effects are universal (cf. Rom 5:12–21). Rowland Moss points out that the appalling breadth of the consequences of the human fall have to be seen against the backcloth of human creatureliness:

Man's disobedience is thus not simply the breaking of a divinely-given rule—a forensic act—but even more fundamentally a denial of his true creaturely nature, a contradiction of the very essence of the created order. It is disobedience, it is rebellion, but it is also refusal to accept the true constituted nature of the universe of which man is a part.<sup>12</sup>

---

<sup>11</sup> R. Moss, 'The Earth in Our Hands', Leicester, England (1983).

<sup>12</sup> R. Moss, *op. cit.*



Thus in Rom 1:18ff. Paul describes human rebellion in terms which have been seen by biblical scholars as deriving directly from the language and concepts of Genesis 3:

The wrath of God is being revealed from heaven against all the godlessness and wickedness of men who suppress the truth by their wickedness, since what may be known about God is plain to them because God has made it plain to them . . . although they knew God, they neither glorified him as God nor gave thanks to him, but their thinking became futile and their foolish hearts were darkened. Although they claimed to be wise, they became fools and exchanged the glory of the immortal God for images made to look like mortal man and birds and animals and reptiles . . . since they did not think it worth while to retain the knowledge of God, he gave them over to a depraved mind (Rom 1:18ff.)

2. The second aspect of particular importance is the curse which comes not only to the man and the woman, but also to the whole created order:

Cursed is the ground because of you;  
through painful toil you will eat of it  
all the days of your life.  
It will produce thorns and thistles for you,  
and you will eat the plants of the field.  
By the sweat of your brow you will eat your food  
until you return to the ground,  
since from it you were taken;  
for dust you are, and to dust you will return. (Gen 3:17b–19)

Thus the fall of humanity is seen not just in personal terms; it is an event whose repercussions are truly cosmic. Given that the creation of man and woman in the image of God (1.26–28) involves relationship between humanity and creation, this is no more than might be expected. The grim words of God in 3:17b–19 are words of judgement, seen repeatedly today in the way things are. Specifically, they promise that a fruitful creation is no longer guaranteed.

The attempt to subdue creation will be a hard task with no promise of unqualified success (see also 4:12). The reference to thorns and thistles can be interpreted as a metaphor for the imbalances that nature will display as humanity continues to exercise a flawed dominion, and of the unproductiveness of the ground (Prov 24:31; Isa 34:13; Hos 10:8). Today we seem to stagger from one environmental problem to another, and Rowland Moss comments, for example, that the history of agricultural research and development is

one of the problems being solved, and in their solution, new problems being created.<sup>13</sup>

3. The third important aspect is that the Fall did not nullify the grace of God. Expulsion from the garden took place only after God had provided the man and woman with clothing (3:21); Cain's punishment for the murder of Abel was tempered by a divine mark to ensure that he be protected from reciprocated violence (4:15). Supremely this grace is seen in the charge that Noah is given following the abatement of the flood, a covenant which has important similarities and differences with the original charge God gave to the man and the woman:

Be fruitful and increase in number and fill the earth. The fear and dread of you will fall upon all the beasts of the earth and all the birds of the air, upon every creature that moves along the ground, and upon all the fish of the sea; they are given into your hands. Everything that lives and moves will be food for you. Just as I gave you the green plants, I now give you everything. (9:1-4)

The same chapter outlines the first of the divine merciful covenants. Significantly, it is not only made with Noah and his descendants (9:8f.) but also with 'every living creature that was with you . . . every living creature on earth. I establish my covenant with you: Never again will all life be cut off by the waters of a flood; never again will there be a flood to destroy the earth.' (9:10f.; cf. Je 33:20; Hos 2:18).

The sombre estimate of humanity's treatment of creation supports the idea that it is itself somehow 'fallen', and this is taken up by Robert Faricy as the way in which irresponsible use of the environment is sanctioned by Protestant theology stemming from a Lutheran conception of nature.<sup>14</sup> But Faricy has confused two different theological concepts: first, what IS—our dominion over nature is now such as to instill fear into it; and secondly, what is LEGITIMATE—we are justified in acting in this way. To argue in this way is parallel to taking Jesus' words 'You will always have the poor with you' as justifying the existence and perpetuation of poverty. Genesis 9 is a divine statement about human inability to control the environment properly; it does not suggest that this is to be encouraged. Conservation is now going to be difficult, but that does not allow us to give up.

13 R. Moss, 'The Earth in Our Hands', *op. cit.*

14 R. J. Faricy, 'The Person-Nature Split: Ecology, Women and Human Life', *op. cit.*

In fact the words of the covenant with Noah show that God's grace, while directed towards humanity, is also wide enough to encompass the whole of creation, which remains precious in His sight. This becomes more obvious when we consider the relationship between creation and redemption.

#### 4. The Fact of Redemption

The over-arching theme of the New Testament is the death of Jesus Christ, through which sinful people find peace with God in place of enmity (e.g. Rom 5:1–11). From this it follows that, as God restores believers to a right relationship with Himself and they experience the renewing power of the Holy Spirit, there should be a recognition of the true source of creation and ways of living which display a more responsible attitude towards nature.

Environmental concern challenges us to consider the reasons why the death of Christ is generally interpreted in the New Testament in personal terms and to devote attention to passages where redemption is presented in cosmic terms. Paul Santmire has argued that, while the majority of New Testament writings show an earth-affirming character, it is lacking elsewhere, notably in the Fourth Gospel and the Epistle to the Hebrews.<sup>15</sup> This overlooks the prologue to the Fourth Gospel, whose teaching on creation appears to be deliberately modelled on the opening verses of Genesis 1. Hebrews, Santmire argues, portrays the purpose of God as the establishment of a glorified kingdom of spirits alone.<sup>16</sup> But this does not take into account the opening verses, in which the Son of God, 'through whom he created the universe', is seen as 'upholding all things by his powerful word' (1:2f.). Indeed, it is such emphases which have led to models of creation based on God's immanence, taken up notably by Jurgen Moltmann in his magisterial book *God in Creation*.<sup>17</sup> However, Santmire is right in drawing our attention to the fact that the New Testament does not generally expand upon what are often little more than hints.

The reasons for this may actually help us to see the value of the creation teaching which is present. First, early Christianity was largely an urban phenomenon. Given that much of the Old Testament is written against the background of a covenant between God

---

15 P. Santmire, 'The Travail of Nature', Philadelphia, U.S.A. (1985).

16 P. Santmire, *op. cit.*

17 I. Moltmann, 'God in Creation', London, England (1985).

and a nation whose covenant possession included the land, it is inevitable that some Old Testament emphases are largely taken for granted and are not explicit in the writings of the New. Secondly, one of the heresies the early church faced was gnosticism. Opinions differ on how well developed this heresy was during the first century, but it was present at least in an incipient form. Gnosticism was essentially a dualistic, world-denying philosophical religion which was bound to affirm the ontological distance between the true God and humanity, with creation essentially evil or the result of primordial chaos. In a recent book Philip Lee has argued that one of the weapons with which the early church defeated gnosticism was its belief in a good creation.<sup>18</sup>

Against this background we may see the importance of New Testament passages which affirm a redemption encompassing the whole created order:

For the creation itself was subjected to frustration, not by its own choice, but by the will of the one who subjected it, in hope that the creation itself will be liberated from its bondage to decay and brought into the glorious freedom of the children of God. We know that the whole creation has been groaning as in the pains of childbirth right up to the present time.

(Rom 8:20–22)

And he made known to us the mystery of his will according to his good pleasure, which he purposed in Christ, to be put into effect when the times have reached their fulfilment—to bring all things in heaven and on earth together under one head, even Christ.

(Eph 1:9–10; see also Col 1:15–20)

Rather than seeing redemption as purely personal, the New Testament views it in cosmic terms, and speaks of the final re-creation of the cosmos (e.g. Rom 8:18–25). There are two ways to proceed from this: one is to try to imagine what this would be like—a task beyond imagination. The second is to see these passages as expressions of our hope, spurring Christians on in their witness and helping to shape their ministry of proclaiming this redemption in all its fulness to a needy world. Although there are difficult passages like 2 Peter 3:12 which seem to speak of final annihilation of the material order ('the heavens will be kindled and dissolved, and the elements will melt with fire', RSV), the weight of New Testament teaching re-affirms the goodness of, and a final re-created goal for, what God has

---

18 P. Lee, 'Against the Protestant Gnostics', New York, U.S.A. (1987).

created.<sup>19</sup> If God himself has positive purposes for his creation, so should we.

## **Reflecting on Some Key Questions**

The previous section attempted a theology of creation which is both faithful to the range of the bible's witness, and also addresses current environmental issues. Then comes the demanding task of facing key questions at the level of acceptable practices, and at which a Christian voice may command the attention of scientists, industrialists, politicians and concerned lay people. This may help identify innovations in environmental management which reflect the biblical view of reality (however they are arrived at!) and which can therefore be supported. It should also be pointed out that many decision-makers are coming to see the moral dimensions involved in their work, and look to the leaders of churches for insights. Thus, when the British Council of Churches held public hearings in 1976 on the Commercial Fast Reactor, the panel which heard the evidence included Peter Adams, vice-chairman of the UKAEA Council, and the witnesses included UKAEA officials such as its chairman, Sir John Hill.

### **1. Are Environmental Issues Purely Scientific?**

That the answer to this question, on biblical grounds, is 'No' should be fairly obvious from the foregoing; but it may not be easy to persuade others that what is 'biblical' must be 'right'. The task here is, then, to translate biblical convictions into views and concepts which will command wider attention. On the one hand, there is E. F. Schumacher's dictum: 'a breakthrough a day keeps the crisis at bay'—making the point that new scientific discoveries on their own do not solve environmental crises but merely postpone them. Allied to this is the experience already noted that many innovations are actually double-edged, solving a major problem but bringing others along in their wake. This is worth bearing in mind when the emphasis on modern educational curricula is increasingly on science and technology to the detriment of all else. The assumption seems to be that people automatically acquire whatever moral equipment they need as they go along. On a more positive level, to make any environmental decision on purely scientific grounds is quite impossible;

---

19 H. Berkhof, 'The Christian Faith' (1979), considers 'laid bare' to 'kindled' in the 2 Peter reference; on this translation, the vision is one of purification of the earth rather than its destruction.

any course of action reflects the value we place on our natural environment.

It is also easy to demonstrate that the work of a scientist takes place in a value-laden social context. The scientific process, its aims and its procedures, all involve assumptions which have a moral dimension, however often this is overlooked. The trust that society places in science assumes that its practitioners are committed to truth, honesty and integrity, while often overlooking the fact that scientists are social animals with families to support, reputations to care about, and employers to satisfy; science is now a profession, no longer merely a quest for knowledge.

Then there is the matter of decision-making, to which we shall return. Here it is enough to point out that no environmental management decision can be taken on purely 'scientific' grounds. Each decision involves choices based on criteria which themselves reflect the value-system within which the whole activity takes place.<sup>20</sup> Technological advance is based on non-scientific decisions about how to utilise scientific knowledge. For example, the decision made in previous decades to press ahead with expansion of the nuclear power industry was arguably based on simplistic criteria: it was cheap and clean. Because it was a new industry, the problem of the disposal of waste was not sufficiently appreciated. The same decisions, if taken today, might involve wider criteria, such as the moral questions about disposal of nuclear waste. That is not just our problem but that of succeeding generations to whom we bequeath it and to whom we are responsible. Nor can our ability to prevent a catastrophic accident be taken for granted as in the past. Christians must press for such decisions being taken in the light of all the consequences, and must be alert to what these consequences might be. Being governed by short-term or merely technical and economic interests leads to the neglect of the wider issues.

## **2. Who Makes the Decisions?**

While biblical teaching places upon the whole of humanity the responsibility for environmental management, in practice decisions are taken on our behalf by smaller groups such as governments and industry. Until recently this kind of decision-making process was accepted without question, but the rise of pressure groups such as Friends of the Earth and Greenpeace, and the link between 'Green' politics and local democracy on mainland Europe is a sign that at

---

20 D. Atkinson, 'The Values of Science', Nottingham, England (1980).

least a minority is unhappy with the kinds of decisions which are being made, and their possible repercussions.

The biblical mandate to make responsible decisions in a complex and uncertain world will not allow us to take such remote decision-making processes for granted. Indeed, the value-laden context of science points up the need to ensure a wide representation of opinions, and wide public debate, prior to important environmental decisions being taken. In the case of local communities, refusing access to contractors carrying out surveys to test the suitability of geological sites for nuclear waste disposal, it would be interesting to speculate upon how much mistrust is due to fear of nuclear waste, and how much to the remoteness of the decision-making process.

The Church of England report expresses at length its concern over the lack of openness surrounding the decision-making process as carried out in Great Britain, and cites a recommendation of the Royal Commission on Environmental Pollution that secrecy relating to pollution control measures should be reduced.<sup>21</sup> Such secrecy, which still hampers European Community attempts to monitor the operations at Sellafield, cannot help public confidence regarding decisions taken on our behalf regarding environmental management.

Thus there are two particular ways in which Christians can join others in seeing a wider perspective in the decision-making process. First, there needs to be a greater awareness that politicians are very sensitive to public concerns. There are signs that both British and Irish governments are becoming more aware of widespread public concern over their poor environmental records, and that they will devote more time and legislative effort to improving the situation. This is no cause for congratulation, however. It is one thing to introduce anti-pollution legislation; it is a different matter to police it effectively. A few years ago the Irish government introduced clean air legislation amid much publicity. A closer look at what was proposed proved disappointing; it was only *enabling* legislation, which allowed local authorities to introduce their own measures *if they so wished*. This points up the need to study new legislation when proposed, to ensure that the reality reflects the promise. What underlies this gap, in both the British and Irish situations, is that to enforce environmental legislation needs staff and costs money. The real test of a government's commitment to a better environment can be judged by their willingness to make available the necessary

---

21 General Synod Board for Social Responsibility, 'Our Responsibility for the Living Environment, *op. cit.*

financial, technological and human resources needed to make sure environmental legislation 'sticks'.

Secondly, there needs to be a commitment to widen the scope of environmental decision-making to include public interests and environmental consequences in a more serious way. The Church of England report contrasts the C.E.G.B. Sizewell inquiry with a recent experience in California.<sup>22</sup> In the former case the C.E.G.B. poured vast amounts of its own money and resources into presenting its case, against which the resources available to its opponents were miniscule by comparison and had to be financed by public subscription. In California the San Diego Gas and Electricity Company arranged a public seminar for environmental and planning organisations in an area where it proposed to build a new power station. At the seminar an advisory committee was elected, which examined the company's case for additional generating capacity, consulted widely and recommended a site to the company. This recommendation was accepted.

Similarly, public confidence will continue to be alienated by an obsession with secrecy, not only regarding future plans but also over past errors. The point is that even the suspicion of anything less than full openness on matters of public concern will be highly counter-productive.

It is the biblical mandate to care for the earth, and the knowledge that God is in control of His creation, that must be the antidote to the sort of despair which refuses to believe that anything can be achieved in the face of the power of industry and government. What has been said already in this section shows what can be done, and how governments are becoming more sensitive to public concern. It is interesting to note that, in the wake of Chernobyl and Three Mile Island, the nuclear industry in the U.S.A. is in retreat as a result of mobilised public opinion. This is not to argue that the public are necessarily right; merely that the public can influence policy.

### **3. How are Disasters to be Prevented?**

A short answer is that disasters cannot be prevented. In all environmental disasters, whether technological (Bhopal, Seveso, Chernobyl) or 'natural' (the flooding of two-thirds of the land surface of Bangladesh), the human factor has contributed whether through sustained environmental mismanagement or acts of carelessness. Indeed, the

---

<sup>22</sup> General Synod Board for Social Responsibility, 'Our Responsibility for the Living Environment, *op. cit.*



sombre Christian view of humanity which flows from the biblical account of the fall makes it clear that fallen people can never be fully in control of God's world. Because of the effects of their sin on the natural world, its processes inevitably turn against them; the thorns and thistles of Genesis 3 turn out to be metaphors for the anti-radiation suits of the workers decontaminating Three Mile Island or Chernobyl, and the stranded aeroplanes unable to land relief supplies at Dacca airport whose runways were, like most of Bangladesh, under feet of water.

It is possible to duck the issues and talk about 'accidents', implying both a lack of human culpability and a fatalism which denies the possibility of any realistic response. A recent article has sought to develop a theology of accident by assuming that, since it is impossible to imagine that Chernobyl was in any sense an act of divine judgement (a position rejected in the article due to the way judgement was caricatured therein), it must have been 'what it seemed to most people—an accident, pure and simple'.<sup>23</sup> Yet with few exceptions, human culpability is a major factor in environmental 'accidents', and the term is usually used with reference to the consequences of the incident without any implications as to cause. The report on the Piper Alpha oilrig disaster indicates that one important factor was a breakdown in communication between maintenance staff who had, on the day of the disaster, removed a safety valve, and the operating staff. The Russian authorities, in an unprecedented display of openness, ascribed the Chernobyl disaster to a 'whole series of crude violations of the regulations for the operation of reactor installations'.

In the case of 'natural disasters' the human element may also be important, although the dangers of simplistic blame-apportionment are great. For example, the flooding of two-thirds of Bangladesh during 1988 could be blamed simply on particularly heavy monsoon rains; but a worrying contributory factor was the deforestation of Himalayan slopes in India and Tibet, causing the transfer of large amounts of soil to the Ganges river system, which then silted up the flood plain of the river (i.e. most of Bangladesh). But even this is simplistic; deforestation was due to economic factors, particularly the extreme poverty of the peoples living in the upland regions.

A disaster-free world is an impossibility. The sinfulness of humanity warns against such complacency. On the other hand, the

---

23 M. Tucker, 'Accident and creation', *Crucible* (1987), pp. 153-160.

charge to responsible dominion has not been withdrawn, and the question remains: how can the incidence of disasters be minimised and their effects swiftly dealt with? Christians must help to insist that these questions are constantly faced by those responsible.

Current work in nuclear accident prevention is applicable to other areas where environmental disasters are possible. One approach being explored involves the replacement of the 'rule-book' approach by that of 'problem-solving'. The former assumes that all eventualities can be predicted and the operators trained to cope with them. Three Mile Island showed the shortcomings involved. The latter is much more flexible. The philosophy behind it is that, given the impossibility of predicting all eventualities, it offers a better chance of the problem being quickly solved.<sup>24</sup> Similarly, in a 1987 conference entitled 'Human reliability and nuclear power', delegates from Electricité de France expressed the judgement that particular innovations in safety techniques are only effective for about one year, after which staff tend to become desensitised to the reasons why the innovation was introduced. More important, they believe, is the creation of a 'human dynamic' activated by the staff themselves, in which motivation, responsibility and honesty are vital.<sup>25</sup> The creation of this sort of environment in which the moral and technological dimensions are integrated takes us far beyond a merely scientific problem, and requires a solid Christian input if merely economic factors are not to win in many cases.

#### **4. How are Risks to be Assessed?**

It is impossible to imagine a risk-free world. Every technological enterprise contains an element of risk, and environmental damage may result from something going wrong. The Methodist Church report *Shaping Tomorrow* expresses it thus: 'Christian faith endorses the acceptance of risks as a normal and proper part of a life directed towards the achievement of God's purpose. The very message of Jesus' own life is the willing acceptance of risks in the pursuit of God's loving purpose'.<sup>26</sup> This asserts that risks are not just to be endured; they are an integral part of human living.

The problem is not the elimination of risk, but its assessment, or

---

24 N. Holloway, 'The significance of human actions for plant safety', *Atom* (1988), 379, pp. 2-7.

25 W. Peters, 'Human reliability in nuclear power', *Atom* (1988), 377, pp. 19-20.

26 Home Division of the Methodist Church, 'Shaping Tomorrow', London, England (1981).

the comparison of risks involved in alternative courses of action. If the projected energy shortfall from fossil fuels is real, the risks of nuclear energy must be balanced against the risks of doing without it. Thus there are two sets of risks to be assessed here, and dissimilar kinds of risks at that, which makes it extremely difficult to compare them.<sup>27</sup> What is needed first is a greater appreciation of the nature of risk analysis.<sup>28</sup>

When the Rasmussen Report calculated that the likely risk of any nuclear power station suffering a catastrophic accident in any year was many millions to one against, it seemed very reassuring. But the problem is: what do such figures mean? The question is made more urgent by a more recent approach to the calculation of risks—that which builds upon the occurrence of nuclear incidents such as Three Mile Island and Chernobyl. A study by Islam and Lindgren used this approach to predict that the mathematical probability of a reactor incident occurring in the next 10 years is 86%.<sup>29</sup> The methodology, and a possible semantic confusion between *probability* and *likelihood*, have subsequently been criticised by A. W. F. Edwards. He nevertheless concludes: 'All we can really say is that the probability of an accident in the next ten years is unlikely to be less than a quarter—a sufficiently alarming prospect not to detract from the main point they were making.'<sup>30</sup> In any case, not all risks can be quantified in this way.<sup>27,31</sup> There must be an insistence on rigorous safety standards even if these are expensive. This applies to most technology, where profit is frequently put before risk of damage to people and environments. Only massive financial compensation for accidents will bring this home to some people and the law may need strengthening here.

Decisions with environmental consequences that are made by politicians and others depend as much on the risks as perceived by local communities which are involved as on figures themselves. A study of attitudes in Cumbria to the operation of Sellafield concluded: 'There is an organic web of risk attitudes in West Cumbria,

---

27 R. A. D. Ferguson, 'Risk estimation and evaluation', *Science and Public Policy* (1982) 9, pp. 251–254.

28 R. Elsdon, 'Living dangerously: a theology of risk', *Third Way* (1987), 10, pp. 13–15.

29 S. Islam and K. Lindgren, 'How many reactor accidents will there be?', *Nature* (1985), 322, pp. 691–692.

30 A. W. F. Edwards, 'How many reactor accidents?' *Nature* (1986), 324, pp. 417–418

31 General Synod Board for Social Responsibility, 'Our Responsibility for the Living Environment', *op. cit.*

deriving from individual webs of experience, argument, agreement, reflection and resistance . . . there is a continuing need for more complete and more sympathetic understanding of the attitudes and positions of communities affected by nuclear (and other) risk issues'.<sup>32</sup> One of the major ways forward, the study concludes, is to find ways in which the public can be enabled to share current knowledge about the operation of the facility in question—in this case a nuclear one—but the conclusion is of more general application.

### **5. How are Long-term Trends to be Predicted?**

It is difficult to see far into the future because technological progress is so rapid. This progress may give cause for optimism about our ability to replace 'dirty' processes with 'clean' ones. But if we are to be realistic about the human condition, encompassing complacency, lack of care, and vested economic interests, it would be wrong to take this for granted.

Meanwhile, there are two separate issues under this heading. The first is: what to do about trends we can predict? It has long been suspected that aerosol propellants would cause depletion of the ozone layer in the upper atmosphere, but it was a long time before cause-and-effect could be proved. By that time, the effect was already substantial and the eventual banning of the use of aerosols in many countries was a case of 'better late than never'. The effects of this depletion will probably continue to worsen for some years (or even decades) before any improvement can be anticipated. Must we always wait for incontrovertible proof before taking action? (the cases of cigarette smoking and lung cancer, and pollution of the North Sea are other cases in point). The final proof may arrive when it is too late to undo the damage. The answer to this problem is that concerned Christians should join others in keeping up a constant pressure on governments and industries over environmental practices which are potentially deleterious.

Secondly, some trends cannot be predicted. It may seem at first sight that nothing useful can be said about this issue of 'hypotheticality'.<sup>33</sup> As Arthur Peacocke has pointed out, 'the irony, challenge and tragedy' of the situation is that, in the sphere of environmental management, 'the ambiguities and ignorance involved in human decision-making could, because of its feedback character, induce

32 S. M. Macgill, 'Sellafield: what the locals say', *Atom* (1987), 372, pp. 20–23.

33 W. Hafele, 'Hypotheticality and the New Challenges: The Pathfinder Role of Nuclear Energy', *Minerva* (1974), 12, pp. 314–315.

oscillations of increasing amplitude in the ecological effects of such decisions beyond the limits of tolerance of terrestrial ecosystems'.<sup>34</sup> He goes on to show how this involves a paradox about man, free to make decisions on the one hand, yet helpless on the other before their consequences. Escape from the paradox is only possible through the realisation that such problems are not purely scientific.<sup>35</sup> It means that the possible risks involved in new processes ought to be explored in depth and not left to those who claim that whatever can be done should be attempted, for example in genetic engineering of viruses.

### **6. Is Exploitation More Important than Conservation?**

If conservation is defined as 'the management of human use of the biosphere so that it may yield the greatest conceivable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations' (a definition which, significantly, was adopted by the World Conservation Strategy), then we approach a concept which includes 'exploitation' in its proper sense and is not inconsistent with the divine commission to exercise a responsible dominion over a created order, one of whose purposes is to supply the needs of humanity.

Awareness of the deleterious effects of thoughtless environmental practices has led in some cases to more conservation-oriented alternatives, and economic factors have also played their part. One of the effects of the OPEC-induced multiplication of oil prices in the 1970's and early 1980's was the incentive to develop more energy-efficient processes, such as car engines which would achieve far higher than the customary 20–30 miles per gallon, and the use of 'waste heat' from power stations in district heating, as well as advances in thermal insulation technology in houses and workplaces, and research into other energy sources such as wind and tide.

Legislation regulating development of mines and quarries is increasingly sensitive to the need for conservation, especially since maximisation of production leads to many such operations being exhausted within decades. In the past the heritage was ugly, dangerous holes in the ground, and land poisoned by metalliferous water. The future could see more mines whose operations are landscaped and the waste rock carefully disposed of. In the north of Scotland the material extracted from a huge new stone quarry in a scenic coastal

---

34 A. R. Peacocke, 'Creation and the World of Science', Oxford, England (1979).

35 A. R. Peacocke, *op. cit.*

area is being transported via an underground conveyor belt several miles long, at the end of which it is loaded onto ships. No road transport is involved. Given the right incentives, there are many technological possibilities which can be used to ensure minimal damage to the environment, and a proper conservation-oriented exploitative practice.

Vigilance is still needed, because such operations are often more expensive than less environmentally-sensitive ones. Economic considerations also indicate vigilance. It can be argued, as was done at the British Council of Churches hearings into the proposed Commercial Fast Reactor in 1976, that the money pumped into nuclear research for so many years systematically starved funding of research into alternative energy sources. So while wind, solar and tidal power make only a marginal contribution to national energy budgets, how different might things might have been if the funding of research into nuclear energy and the 'alternatives' had been roughly equal?

### **Postscript**

It is possible to predict that public interest will eventually wane as other issues become more important. We have seen that the biblical doctrine of creation insists that the natural world does not exist solely to satisfy human need, so that self-interest is an inadequate motive for Christian environmental concern. Similarly, romantic views of nature which are often expressed are inadequate because they fail to set the created order in its correct context of relationships with its Creator and with humanity.

This article has suggested that the Christian task is twofold: first, to think out an understanding of creation which is faithful to the full range of the biblical material. Secondly, to use that understanding to identify and engage in discussion of particular questions of modern environmental management—questions in which the technological, scientific, economic and ethical spheres overlap. Only when we reach this stage will we be listened to. It will also be possible to judge the depth of Christian understanding of creation by the way in which our concern for proper management of the environment persists when it ceases to be a major concern of others.

If our sights are on the 'new heavens and new earth' which Revelation 21 promises, a renewal which will encompass the whole created order, then the persistence in Christian saltiness which is an expression of that hope will continue to include our insistence that

### **Some Current Environmental Issues**

the earth be treated with the care it deserves as an expression of its Creator's love and wisdom.

**Dr Ron Elsdon is a Lecturer in Geology at University College, Dublin, and author of the book 'Bent World' on environmental issues.**