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Thermodynamics and the Christian View of Life *

In his essay 'A Free Man's Worship' written in 1903¹ Bertrand Russell begins with an account of Creation as given by Mephistopheles to Dr Faustus as follows:

The endless praises of the choirs of angels had begun to grow wearisome; for, after all, did he not deserve their praise? Had he not given them endless joy? Would it not be more amusing to obtain undeserved praise, to be worshipped by beings whom he tortured? He smiled inwardly, and resolved that the great drama should be performed.

For countless ages the hot nebula whirled aimlessly through space. At length it began to take shape, the central mass threw off planets, the planets cooled, boiling seas and burning mountains heaved and tossed, from black masses of cloud hot sheets of rain deluged the barely solid crust. And now the first germ of life grew in the depths of the ocean, and developed rapidly in the fructifying warmth into vast forest trees, huge ferns springing from the damp mould, sea monsters breeding, fighting, devouring, and passing away. And from the monsters, as the play unfolded itself, Man was born, with the power of thought, the knowledge of good and evil, and the cruel thirst for worship. And Man saw that all is passing in this mad, monstrous world, that all is struggling to snatch, at any cost, a few brief moments of life before Death's inexorable decree. And Man said: 'There is a hidden purpose, could we but fathom it, and the purpose is good; for we must reverence something, and in the visible world there is nothing worthy of reverence.' And Man stood aside from the struggle, resolving that God intended harmony to come out of chaos by human efforts. And when he followed the instincts which God had transmitted to him from his ancestry of beasts of prey, he called it Sin, and asked God to forgive him. But he doubted whether he could be justly forgiven, until he invented a divine Plan by which God's wrath was to have been appeased. And seeing the present was bad, he made it yet worse, that thereby the future might be better. And he gave God thanks for the strength that enabled him to forego even the joys that were possible. And God smiled; and when he saw that Man had become perfect in renunciation and worship, he sent another sun through the sky, which crashed into Man's sun; and all returned again to nebula.

'Yes' he murmured, 'it was a good play; I will have it performed again.'

* This is a paper delivered at a meeting of the Research Scientists' Christian Fellowship held during the Southampton meeting of the British Association, in the University, Southampton, on 31 August 1964.

¹ *Mysticism and Logic*, Penguin Books, 1953, pp. 50-51.

He continues:

Such, in outline, but even more purposeless, more void of meaning, is the world which Science presents for our belief. Amid such a world, if anywhere, our ideals henceforward must find a home. That Man is the product of causes which had no prevision of the end they were achieving; that his origin, his growth, his hopes and fears, his loves and his beliefs, are but the outcome of accidental collocations of atoms; that no fire, no heroism, no intensity of thought and feeling, can preserve an individual life beyond the grave; that all the labours of the ages, all the devotion, all the inspiration, all the noonday brightness of human genius, are destined to extinction in the vast death of the solar system, and that the whole temple of Man's achievement must inevitably be buried beneath the debris of a universe in ruins—all these things, if not quite beyond dispute, are yet so nearly certain, that no philosophy which rejects them can hope to stand. Only within the scaffolding of these truths, only on the firm foundation of unyielding despair, can the soul's habitation henceforth be safely built.

I don't know if Lord Russell still holds these views. Science has moved quite a long way since they were written, and such scientific doctrines as the Principle of Indeterminacy have put a rather different complexion on things. But certainly some prominent thinkers still believe that the scientific world-view is the enemy of the biblical doctrines of Providence and Purpose, as witness Sir Julian Huxley in his major work, *Evolution, the Modern Synthesis*.¹ 'The ordinary man', he writes, 'or at least the ordinary [*sic*] poet, philosopher and theologian, is always asking himself what is the purpose of human life, and is anxious to discover some extraneous purpose to which he and humanity may conform. Some find such a purpose exhibited directly in revealed religion; others think that they can uncover it from the facts of nature. One of the commonest methods of this form of natural religion is to point to evolution as manifesting such a purpose. . . . I believe this reasoning to be wholly false. The purpose manifested in evolution . . . is only an apparent purpose. It is as much a product of blind forces as is the falling of a stone to earth or the ebb and flow of the tides. It is we who have read purpose into evolution. . . . If we wish to work towards a purpose for the future of man we must formulate that purpose ourselves.' Evolutionary science, in other words, presents us with the same purposeless view of things. All is due to the same 'accidental collocations of atoms', or of predators and prey; and in so far as there is any real purpose in Life it all originates with Man, a late comer on the scene and hardly a

¹ George Allen & Unwin, 2nd edn., 1963, p. 576. Reviewed in *Faith and Thought* (Vol. 93, no. 3, summer 1964).

very stable source of this ingredient. Purpose doesn't seem therefore to be, to Sir Julian, very deeply rooted in the constitution of things. In passing we may note how, apparently unnoticed, a major presumption appears in his argument. We might be disposed to agree with his assertion that the large-scale phenomena of life are 'as much a product of blind forces' as is the falling of a stone; but that even the falling of a stone is ultimately to be thought of in such terms is a proposition to which the Bible gives an emphatic denial.¹ If simple physical happenings may be thought of as the outcome of the Divine Will (and Science can offer no valid objection to this interpretation) then Sir Julian's whole argument becomes rather insubstantial. It fails in fact to realise that scientific laws are *descriptive* and not *prescriptive*; in the ultimate sense they account for nothing.

Suppose we ask what are the elements in the scientific picture of Nature which contribute most to the impression of a Universe devoid of purpose and meaning; what would the answer be? It would hardly include Relativity, with its emphasis on what might be called the large-scale architecture of time and space; nor Quantum Theory, with its description of the fine structure of things. Even Neo-Darwinism would hardly qualify, for while it makes much of the ideas of randomness and chance it does recognise that once the level of organisation we call life, and particularly self-conscious life, has been achieved, 'progress' and eventually 'purpose' enter the world of matter; and it is not a big step from this recognition to maintain that they were there all the time, only hidden. Probably most people would agree therefore that some other element is chiefly responsible for the impression, and it is not difficult to find it in the Second Law of Thermodynamics. In fact, Bertrand Russell makes four rather specific points:

- (i) Man is the product of blind causes.
- (ii) His total life is merely the outcome of chance encounters of atoms.
- (iii) Individual life ends with the grave.
- (iv) The whole achievement of mankind is destined to extinction in the death of the solar system, and perhaps of the Universe.

It would not be true to say that all of these points illustrate our present preoccupation with the Second Law, but certainly this law has much relevance to them. In passing, Bertrand Russell himself

¹ See, for instance, Prov. xvi. 33; Luke xiii. 4, 5; Matt. x. 29, 30.

answers the first point in a later essay in the same collection¹ when he writes:

This supposition [that the world of mind and matter is a mechanical system] . . . throws no light whatever on the question whether the universe is or is not a "teleological" system,

a conclusion which permits the simultaneous validity of the biblical view of nature and its scientific description in terms of law.

The Second Law of Thermodynamics

Before we proceed it will not be out of place to say a few words about the famous Second Law of Thermodynamics. Alone among the generalisations of physics it distinguishes between a forward and a backward direction in time. It takes its rise from the observation that all happenings in physical nature involve the element of irreversibility. Even such a simple thing as the dissolving of a lump of sugar in a glass of water leaves an indelible imprint on the Universe. Of course, the sugar can be recovered in its original form, and likewise the water, but only at the cost of further changes elsewhere, changes we become aware of when the gas and electricity bills are rendered. It is impossible therefore to *exactly* restore the entire *status quo*; some sort of imprint on the physical Universe is there for all time. Thermodynamics refers to this element of irreversibility in terms of an increase in a property called the entropy, and one form of the Second Law due to Clausius runs:

'The entropy of the Universe is continually increasing'

For present purposes it is unnecessary to define entropy at all exactly; it will be enough to remark that it is connected in the positive sense with the ideas of randomness, probability, disorder and degradation. Correspondingly from a thermodynamic point of view the history of the Universe, both past and future, can be described as follows:

- (i) Nature pursues an irreversible course.
- (ii) This course is characterised by an overall continuous increase of entropy.
- (iii) The rise of entropy corresponds to a degradation of energy and a decrease of order. In particular all ordered movement is doomed to come to an end and all ordered structure to descend to the lowest level.
- (iv) Chance is the sole determining factor in the final outcome, thermodynamic equilibrium.

¹ 'On the Notion of Cause' in *Mysticism and Logic*, Penguin Books, p. 190.

The Second Law has been called the most absolute of all the laws of physics. When relativity and the quantum phenomena were discovered very radical changes were imposed on large areas of physical theory, and a fundamentally new understanding of Nature emerged; but the Second Law was unscathed. Even if modern theories of Continuous Creation are verified the significance of the Second Law will not be markedly affected, and it seems rather unlikely that this fate will ever befall it. This only makes it more urgent to face the problems it poses for Christian faith, since there seems little likelihood that science will solve them for us. Even Continuous Creation at most can only slightly alleviate them; and Continuous Creation is far from being a verified hypothesis.

Biology and the Second Law

When the time comes to discuss them I shall confine myself mainly to two aspects of the Second Law; that chance alone¹ seems to dictate the end, and that the end is thermodynamic equilibrium. Before we come to this, however, we must notice very briefly a point which has some relevance to the main problem; is the Second Law applicable to living systems? The question has a double bearing on biology. Ontogenetically, the development from a single cell to adult organism seems to run counter to the processes of degradation spoken of by the Second Law; and phylogenetically, the progress from simple organisms to highly complex ones is superficially similar. However, in neither case can any real antithesis be maintained. Simple physical systems (such as a thermal diffusion cell) can very easily be set up in which, in the context of an overall increase in the entropy of the system and environment, the system itself undergoes a decrease in entropy. It gains in order at the expense of a rather greater loss of order by the environment, rather as a heavier-than-air machine rises by imparting a greater downward motion to the air in which it moves. Ontogenetically therefore there is no real problem. The case of phylogeny is even less troublesome and need not detain us.

Thus there is no escape from the question we are considering in the thought that perhaps where life is involved the Second Law is not obeyed, and that living systems are able to conduct processes which run counter to the otherwise universal principle of degradation. So far as

¹ That is, for an *isolated* system, such as is substantially the case with our solar system.

we can see living systems are just as much subject to physical laws as are non-living ones, and in particular to the Second Law of Thermodynamics.

The Christian View of Life

In discussing the Christian, that is the biblical, view of life I shall concentrate on Man, since this is where the crux of the problem really lies. We can note the following points about the biblical doctrine of Man:

(i) The Bible regards man as what might be called a 'psychosomatic unity', or in simpler language as an 'animated body'. It was Greek thought which divided man up into 'soul' and 'body' as separate parts, and this separation has persisted in much Christian thought, as in the well-known hymn:

On the Resurrection morning
Soul and body meet again.

However, biblical passages which refer to the two must be interpreted not in the light of Plato, but in that of Scripture as a whole. The Greek word *psyche* is translated 'soul' fifty-eight times in the New Testament and 'life' forty times; and in many places the sense is clearly not that of the Platonic idea. Thus Herod sought the young child's *life*¹; we are to take no thought for our *life*, what we shall eat²; the apostles hazarded their *lives*.³ If we wished to maintain the distinction in the Greek sense between soul and body then in the passages quoted the appropriate word would seem to be body (*soma*) rather than soul (*psyche*). On the other hand there are passages where the reverse is true; it is the *body* which is cast into hell⁴ (*Gehenna*, not *Hades*). In this context much Christian thought, following Plato, would instinctively substitute *soul*.

(ii) However, this unity is a *spoilt* one since Man is a fallen creature. This emphasis lies at the back of the words so often on the lips of Jesus Christ, 'Wilt thou be made whole?' or 'Thy faith hath made thee whole'. This wholeness however, is not something self-contained, and man is not to be regarded as like a broken watch needing repair. It is something realised only when man's life recovers its right relationship with God, and in fact this aspect of biblical teaching is very strongly

¹ Matt. ii. 20.

² Matt. vi. 25.

³ Acts xv. 26.

⁴ Matt. v. 29-30.

stressed. Consider such passages as 'In the Name of Jesus Christ . . . even *in Him* doth this man stand before you whole'¹; 'ye are complete *in Him*'²; 'behold, thou art made whole; sin no more',³ sin being a principle of separation from God⁴; or '*In Me* ye . . . have peace',⁵ a most important element in the biblical idea of peace being unity and wholeness.

(iii) While the Bible does not sub-divide man into parts it does speak of different qualities of life, according as man is dominated by different aspects of his total existence. 'He that loveth his life (*psyche*) shall lose it; he that hateth his life (*psyche*) . . . shall keep it unto life (*zoē*) eternal'.⁶ Life connotes two things in particular: awareness, and the power of response. Imagine a man spending his last days under sudden and unexpected sentence of death. He is stunned, dead to the world, to music, to science or to any other interest. His awareness towards these things has fled, and his life is dominated by the presence of fear. Compare this with the heightened awareness of a man whose life is under the domination of a different element, love. Falling in love is perhaps a rather dangerous illustration to use here, but in the best cases it will serve to illustrate the point! These examples may help us to see what the Bible means by different qualities of life as conditioned by different levels of awareness, accompanied by different abilities to respond. As examples of its stress on the former (i.e. awareness) we may instance 'Thou wilt show me the path of life; in Thy presence is fulness of joy'⁷; and 'this is eternal life (*zoē*) that they know Thee . . .'⁸ For the latter (i.e. power to respond) we may recall 'I can do all things in Him who strengtheneth me',⁹ and 'the people who know their God shall stand firm and take action'.¹⁰

(iv) Man's life is entrusted to him by God and will finally be required of him. This is true whether the use he makes of it is good, as in our Lord's case 'I have finished the work which Thou gavest Me to do'¹¹; or evil, as in the parable, 'Thou fool, this night thy soul (*psyche*) shall be required of thee'.¹² In the biblical view therefore, man's natural life as now constituted emphatically has a God-appointed termination; it is lived under a regime in which it is 'subjected to futility' and in 'bondage to decay'.¹³

¹ Acts iv. 10 (R.V.).

² Col. ii. 10.

³ John v. 14.

⁴ Isa. lix. 2.

⁵ John xvi. 33.

⁶ John xii. 25.

⁷ Psalm xvi. 11.

⁸ John xvii. 3 (R.S.V.).

⁹ Phil. iv. 13 (R.V.).

¹⁰ Dan. xi. 32 (R.S.V.).

¹¹ John xvii. 4.

¹² Luke xii. 20.

¹³ Rom. viii. 20-21 (R.S.V.).

(v) Finally, and as a consequence of the foregoing, the Bible is not concerned with the Greek way of posing the problem of the inner conflicts of man's nature. The Greeks saw this as an antagonism between reason and passion, or soul and body; the Bible sees it essentially as a conflict between man as an autonomous being and God. As a highly inadequate and anachronistic analogy we might say that the Greeks saw man as a locomotive with its wheels all askew; the Bible sees him as off-the-rails. Correspondingly the Greeks sought to align the wheels, the Bible seeks to replace him on the track. It is consistent with this view that in its doctrine of the resurrection the Bible does not state that the body is raised to be reunited with its separated soul; it is the *man* who is raised. He arises with a new body (*pneuma*—instead of *psyche*-), the characteristic being that in this body the Christian man's relationship with God is fully and finally restored¹; in other words, his life achieves perfection.

Thermodynamics and the Christian View

I now have to try to draw together the threads of what are two quite distinct 'universes of discourse', so distinct in fact that they may seem to have very few points of contact. As we dealt with the thermodynamic standpoint first it will be appropriate to pick up the threads of this, and relate them as we do so to the biblical view, which is fresh in our minds.

Life as we know it (barring ghosts and other questionable phenomena) is always associated with matter and energy. There seems no possible escape for matter and energy from the implications of the Second Law. These are that the end to which all things are moving is determined solely by considerations of entropy (that is, chance); and that the end is characterised by total equilibrium. It has to be remembered that all awareness through the medium of the physical senses must cease at thermodynamic equilibrium, the eye, for instance, seeing only when the light entering it is out of equilibrium with the radiation which as a material body it is itself emitting, and a similar statement being true for the ear. Further, the power of organised movement or response is also at an end. Biologically therefore, thermodynamic equilibrium is total death.

In comparing this with the biblical view we notice at once some points of congruity. Bearing in mind that the Second Law is based

¹ Phil. iii. 21 (R.S.V.); 1 Cor. xv. 28, 42-44.

wholly on *physical* observations made on *physical* systems,¹ and has therefore no validity when applied to non-physical entities such as mind or spirit, it is noteworthy that the Bible also speaks of the physical side of man as inevitably subject to decay and death, though in its teaching on death it goes beyond this and embraces also spirit.² Further, the characteristics of mortality are very much those predicted, in different terms, by the Second Law: no physical movement and no awareness,³ and strikingly, no order.⁴ For the Bible, man's progress to this state is also, from one point of view, validly described in terms of chance.⁵ Thus, provided we confine attention to the physical aspect of man's being no conflict appears between the biblical teaching and the expectations of thermodynamics.

The Crux of the Matter

However, this is just what Bertrand Russell, in the passage quoted, does not do; he appears to subject man's non-physical side, his hopes and fears, his loves and his beliefs, to the Second Law as well. The justification for this is probably to be sought in a belief that mind and personality have arisen as what might be called local phenomena within the context of an overall movement of matter and energy to thermodynamic equilibrium. Of course therefore, being conditioned by matter, they share its fate. But the Bible views things the other way round; it teaches that matter and energy (it does not of course use these precise notions) have arisen as local phenomena within an overall context of life and thought—that of God.⁶ To repeat the point: Bertrand Russell appears to see life and thought within a framework of matter and energy; the Bible implies that the reverse is the true view. Put with a different emphasis, one sees mind as arising out of the workings of chance, the other sees chance as operative owing to the decisions of mind.

It should be fairly obvious that which of these two views is the right one is a point which cannot be decided by logic alone, even granted the physically universal validity of the Second Law. It is probably quite possible to maintain with logical self-consistency that mind has arisen as a newcomer out of the chance encounters of atoms 'wandering endlessly, meaninglessly'; after all, it is just conceivable that plastic letters

¹ Living organisms are physical systems in this sense.

² See for example Luke xv. 24, Ephes. ii. 1, Rev. iii. 1.

³ Eccles. ix. 10.

⁴ Job x. 22.

⁵ Eccles. ix. 11, Luke x. 31.

⁶ Gen. i. 1, John i. 1-3.

shaken out of a bag might fall into positions spelling out a piece of pregnant prose! But life is more than logic, and few would probably feel satisfied that such a barren consideration did justice to the facts.

On the other hand the thesis that a physical universe dominated by the Second Law (that is, by chance) had been called into being by Mind runs into the difficulty that the rule of chance seems to be the negation of the rule of Mind; it would appear therefore on this view as if Mind, having exercised itself creatively, abdicates in favour of chance, at least for a time. This conclusion however, is quite unwarranted. It remains entirely true that the self-same events can be validly described both in terms of chance and randomness, and in terms of mind and will. As a matter of fact the very realisation that all physical laws are statistical in nature has been used by an American physicist¹ of no mean standing to reconcile the biblical doctrine of an immanent Providence with the scientific picture of a world subject to law; and in a simple way this contention can be justified as follows.

Without loss of generality we may consider a series of 'random' numbers instead of a sequence of chance events. What is required of such a series in order that it may legitimately be called random? Simply this, that it should follow no readily discernible law. The series 1, 2, 3, 4, 5 . . . might, as a matter of fact, be part of a random sequence obtained perhaps by the throwing of a symmetrical dice; but we should hardly be prepared to accept it as such since it appears to exemplify too obvious a law. A random series of numbers can accordingly be generated not only by such mindless processes as throwing a dice but also by procedures *mentally determined at every point* if only such procedures *follow rules sufficiently involved*. For instance, a line of chosen form might be drawn across a table of logarithms, and the numbers appearing along it selected by a suitable arbitrary procedure. If this programme were carefully designed, the detection of any law in the resulting numbers would be an impossible task, and they would accordingly be genuinely 'random'. But at no stage has mind abdicated in favour of chance. Nor need it in the realm of natural events. Here both descriptions remain valid, for mind has no difficulty at all in 'programming' random events.

The above considerations are not, incidentally, the whole story. Even if the selection of individual events is left to such a mindless procedure as dice-throwing it is still true that chance operates only within a framework of law. The motions of atoms may be random, but the laws

¹ W. G. Pollard, *Chance and Providence*, Faber & Faber, 1959.

according to which they interact are not, and this is true even if these laws be themselves statistical. Mind can design the dice to be loaded in any way it chooses, or to have many unequal sides instead of six equal ones. All such choices will influence the results chance throws up. The 'absolute empire of chance' becomes in fact, in the light of all this, rather a problematical conception.

Spirit Transcendent

We are therefore perfectly free to conclude with the Bible that the transcendent reality is not matter but mind, or as we would prefer to put it, Spirit.¹ Matter and energy are but impermanent inhabitants of the world of Spirit, and there is no inconsistency involved in holding this view alongside a belief in the validity meanwhile, for physical nature, of the Second Law. Mind has the workings of this law firmly under control. This is the view which in effect the Bible itself takes in connection with both human affairs and those of nature.²

The Christian View of Life—an Analogy

The conclusion that Spirit is transcendent over matter and energy refers of course to God as Spirit and not to man, and in this essay we are concerned principally with man. The Christian view of man does after all teach that he has an essential physical element in his make-up (subject presumably to the Second Law). If this is not a dispensable part of him how does the whole man stand with regard to the Law? What any acceptable analogy needs to safeguard is the Bible's doctrine that when man's life is rightly related to God it is everlasting³; yet the physical part of him which is subject to decay is not an 'optional extra', but is so essential a part of him that it must partake in his resurrection⁴ to give meaning to this everlastingness. It should be noted that 'resurrection' in Scripture always has reference to the body, though not *exclusively* so; it is the whole man who is raised. The body with which he is raised is not identical with the old, though it maintains continuity with it. It is opposed to it as 'spiritual' to 'natural',⁵ and this also is a point the analogy must meet. Finally, we must accommodate the fact that the spiritual element of man takes precedence over the physical.⁶

¹ John iv. 24; Gen. i. 2.

² Cf. 2 Chron. xviii. 33, xviii, 17-22; Psalm xxix (R.V.).

³ John xi. 26 and many other passages.

⁴ Mark xii. 26-27.

⁵ I Cor. xv. 44.

⁶ I Cor. ix. 27.

Scripture itself suggests an analogy for us in such passages as those where it speaks of the believer as God's 'workmanship' (*poiēma*, cf. English 'poem')¹ and man as having been made in the 'image' (Heb. *tselem*, Gk. *eikōn*)² of God. These figures can be held to justify the description of man as God's great 'work of art'. If this be a legitimate way of regarding him then we can draw the following parallels. A work of art has no existence of its own until it is embodied in a physical medium. Until then it is known only to its Creator; after that it can enter into manifold relation. This might well point the significance of the body, which like the medium in human works of art is subject to decay.³ However, there is clearly something in a work of art which transcends the medium. It is this which is 'known' in aesthetic experience, and it corresponds to spirit 'known' in personal encounter. Clearly this element is not subject to the Second Law. In an important sense this aspect of a work of art is independent of the physical medium; were the latter to be destroyed the work could be reconstituted, recognisably the same, in a new medium, perhaps in oils instead of water-colours. This may serve as a parallel to the Bible's doctrine of resurrection and of recognition of identity in the world to come.⁴ Further, it is suggestive about the way we should think of the believer between death and resurrection; known only to his Creator⁵ and waiting to be 'clothed upon' before he can enter into the manifold relations of eternal life.⁶

The final point the analogy can but dimly hint at. It concerns the quality of life which in man, according to the Bible, depends so much on the extent to which he lives in the presence of God⁷; that is, in the experience of personal encounter with Him. It is as if a work of art, designed for a place of honour in the artist's home, were to banish itself to a dusty cellar. Of what quality would its existence then be compared with what it should have been? It might almost as well never have existed at all. This is virtually what the Bible says about the man whose life is lived out of relationship with God.⁸

The Conclusion of the Matter

The question whether the Second Law of Thermodynamics poses any problems for the Christian view of life clearly turns mainly upon what we regard as the transcendent reality. If, like materialism

¹ Eph. ii. 10.

³ Rom. viii. 20.

⁶ 2 Cor. v. 4.

² Gen. i. 26; Col. iii. 10.

⁴ Thess. iv. 13, 14.

⁷ Psalm xvi. 11.

⁵ Phil. i. 23.

⁸ Luke xv. 16, 24.

and scientific humanism, we see matter and energy in this role constituting the ultimate frame of reference, then clearly the Christian view is unacceptable. It is thus that Bertrand Russell apparently portrayed it:

Only *within* the scaffolding of these truths . . . can the soul's habitation henceforth be safely built.

On the other hand if we see God as ultimate, then things are otherwise. The scientific scheme of things (i.e. the Second Law) is still wholly acceptable, not only when confronted with the Bible's doctrine of God but also, as our final analogy shows, when confronted with its doctrine of man. But it is a scheme of things which fits *inside*, not *outside*, the biblical:

*In Thy light shall we see light.*¹

and

'Of old hast Thou laid the foundation of the earth;
And the heavens are the work of Thy hands.
They shall perish, but Thou shalt endure:
Yea, all of them shall wax old like a garment;
As a vesture shalt Thou change them, and they shall be changed:

But Thou art the same,
And Thy years shall have no end.
The children of Thy servants shall continue. . . .'²

As to which of the two views to take the Second Law can give us little guidance; the great questions of existence are after all always moral and spiritual and have to be decided on such grounds.³

¹ Psalm xxxvi. 9.

² Psalm cii. 25-28.

³ John iii. 19-21; Prov. ix. 10.