

KIERKEGAARD'S GOD AND HAWKING'S UNIVERSE

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In his book *A Brief History of Time* physicist Stephen Hawking tells us that his research in cosmology is prompted by his interest in the following questions: Where the universe came from; why and how it began, and whether and how it will come to an end.¹ He asks why the universe goes to the bother of existing; whether the basic theory concerning its existence is so compelling that the universe brings about its own existence, or whether the universe needs a creator, and if so, whether that creator has any other effect on the universe. Finally he asks: if there is such a creator, who created him?² Hawking's book attempts to make the basic ideas about the origin and fate of the universe clear to ordinary people but it is also described as "a book about God ... or perhaps about the absence of God", in that on the one hand Hawking considers that the discovery of a complete theory of the universe would mean one "would know the mind of God", but on the other Hawking concludes with the probability of "a universe with no edge in space, no beginning or end in time and nothing for a creator to do".³

Stephen Hawking is one of the leading figures in 20th century physics and cosmology and, as is the case with many other results of current scientific research, his thought reaches and influences the outlook not only of those working in other areas of science and scholarship, but also of the man-in-the-street. As a result, the world-view of people in earlier periods of history is too often seen as out-of-date, necessarily defective or entirely incorrect, with plenty of examples of unchallengeable discoveries (such as the fact that the earth goes round the sun) to confirm this opinion.⁴

It is therefore perhaps not unfitting that one aim of this paper is to show that such an assumption is itself defective. Particularly, I wish to argue that the world-view of a leading mind in the 19th century, Søren Kierkegaard, is not only not "out-of-date" but is in fact highly relevant to some of the difficulties encountered by Stephen Hawking in his search for a unified explanation of the universe.⁵ In order to show how this can be possible, I will first outline Hawking's perspective on the universe and some of the key problems raised; second, I will outline Kierkegaard's own conception of the universe with his Christian idea of God; and finally I will attempt to show how some of Hawking's difficulties can be dealt with only on Kierkegaard's basic assumptions, which latter can also be linked to areas of experience excluded by Hawking in his investigations.

Like many other theoretical physicists, Hawking is searching for a final, simple interaction or law that will explain "all of the phenomena that surround us", so that we can arrive at "a complete understanding of the entire universe".⁶ In his book, he outlines the history of thought about the cosmos, showing how science has moved from Newton's basic assumption that time is absolute and the thought that the heavens are stably in balance, to the notion of space-time, the universe of Einstein's general and special relativity, and Hubble's theory of the Big Bang.⁷ We are shown how the universe seems to operate according to several basic sets of rules that act independently in layers. Hawking tells us of

the development of the attempt to reconcile the four basic principles: gravity; the strong nuclear force that holds the nucleus of an atom together; the electromagnetism that keeps electrons in place around the nucleus and makes matter appear solid; and, finally, the weak nuclear force responsible for radioactive decay.⁸ Hawking points out that the universe is now described in terms of two basic partial theories that are in fact inconsistent with each other: the general theory of relativity and quantum mechanics.⁹ Thus, although research has led to what is known as Grand Unified Theory that makes the relevant connections between three of the four basic rules, there is still lacking a complete theory that will include gravitational force and thus create the final single unified law. In other words, something is needed to reconcile quantum mechanics used for handling matter on a small scale, particles, etc., with the general theory of relativity that describes the force of gravity and the large-scale structure of the universe, a reconciliation that is essential in view of the postulate that the universe at its beginning had zero size.¹⁰

According to Hawking, in striving to achieve such a unified theory that will describe the entire universe,¹¹ scientists tend to divide the problem into two parts: 1) laws that say how the universe changes with time; 2) the question of the initial state of the universe.¹² As Hawking points out, it is the second part of the problem that is particularly controversial, and there are those who consider that the question of the initial state of the universe belongs to the realm of metaphysics or religion and should not be investigated.¹³ Hawking's response to this is to point out that it looks as if the universe is created to "evolve in a very regular way according to certain laws", therefore one can suppose that there are also laws governing the initial state and he sees no reason why he should not continue to explore the question of these laws.¹⁴ Already in 1970, Hawking and Roger Penrose made a major contribution towards the investigation of the origin of the universe when they showed that Einstein's general theory of relativity implied that the universe must have a beginning and possibly an end. In other words, they took astronomer Edwin Hubble's observations concerning a possible initial Big Bang and an ensuing expanding universe a step further by proving that the universe must have had a beginning in time and by demonstrating the notion of singularity, a point in space-time where mathematics cannot cope with infinite numbers, and the general theory of relativity breaks down.¹⁵

The notion of the Big Bang and an initial singularity has now been generally accepted, and corresponding to this idea is the notion of a possible "big crunch", where the universe begins to cease its expansion and falls back in on itself, reversing the Big Bang process in a final huge collapse.¹⁶ In his book, Hawking discusses developments in various cosmological models of the universe, including the notion of the Big Bang/Big Crunch, but he moves away from his own earlier thinking – moves from the Big Bang singularity where space-time has a boundary with a beginning at the Big Bang, towards a cosmological model in which space-time is finite but has no boundary (that is: has no beginning or moment of creation). Thus, instead of a model with a beginning (and possibly a concluding) singularity, a sort of edge at which the laws of science break down, the situation in Hawking's present model is that "the boundary condition of the universe is that it has no boundary. The universe would be completely self-contained and not affected by anything outside itself. It would neither be created nor destroyed. It would just BE". Thus, Hawking tells us, there would be no need "to appeal to God or some new law to set the boundary conditions for space-time".¹⁷

Hawking hastens to remind us that the idea that time and space are finite without boundary is only a proposal. Like "any other scientific theory", he says, "it may initially be put forward for aesthetic or metaphysical reasons, but the real test is whether it makes predictions that agree with observation".¹⁸ In Hawking's case, his attempt to solve via mathematics the

various problems to do with versions of the Big Bang model of the universe¹⁹ has led him to his present suggestion, but he can see that it is difficult to confirm the theory by observation because, firstly, it is still uncertain which theory of the universe successfully combines general relativity and quantum mechanics; and secondly, because any model describing the whole universe in detail would be much too complicated mathematically for the calculation of exact predictions. Like Kierkegaard's Johannes Climacus in *Concluding Unscientific Postscript*,²⁰ Hawking sees that one has to make simplifying assumptions and approximations, and even then the task of extracting predictions is massive – we could never be certain of a theory. Hawking also makes clear that the singularities of the Big Bang (and possible Crunch), together with the singularities that belong to the phenomenon of black holes, would still appear in the state of real time; that is, he has not completely cancelled out the results of his earlier work on singularities.²¹

Nonetheless, it would seem that, in Hawking's view, theoretical physics will soon arrive at the complete grand unification theory of the four forces to be found in nature, the theory explaining what the universe was like at the beginning and why it behaves as it does today, and it would seem as if Hawking's latest model implies the exclusion of singularity, or the hope that it will be possible to exclude it.²² Hawking's latest model of the universe is therefore one in which it seems as if there is no place for a beginning or a moment of creation and, if there is no beginning in the sense of an edge or point at which the laws of science break down and where one needs to appeal to a creator God or to some new principle of origin, then (as Hawking points out) knowing the workings of the universe becomes identical with "knowing the mind of God".²³

Yet, despite his present conclusion, Hawking does not seem able to let go of the question of why we and the universe exist. The work of both Hawking and others reveals that the universe seems neither totally deterministic nor totally arbitrary.²⁴ Hawking admits that, for the universe to permit life as we know it, it has to be "finely adjusted". "The odds against a universe like ours emerging out of something like the Big Bang are enormous ... there are clearly religious implications whenever you start to discuss the origins of the universe."²⁵ Hawking's latest model must not, therefore, be understood as a deliberate effort to get rid of the notion of a God.²⁶ Rather, the idea that the universe "just is" stems from his calculations towards a complete Grand Unified Theory, leaving him still struggling with the question why.

In an attempt to deal with this fundamental question, Hawking and his colleagues have posited and considered the validity of the anthropic principle as an explanation, a principle which states that "we see the universe the way it is because, if it were different, we would not be here to observe it": (paraphrased by Hawking as: "We see the universe the way it is because we exist")²⁷ though unfortunately it is also developed in other forms in which it is stated that a universe without an observer is no universe, a universe without evolved life could not have come into existence at all; "the universe is the way it is because we have evolved within it".²⁸ With the first statement, the principle makes sense to the extent that, for life to have evolved as we know and experience it, certain conditions have to be met; but in the latter statements the question is begged as to what a universe is, for it to deserve the name universe, and, even worse, the cart is finally put before the horse in the thought that our evolution is the cause of the universe being the way it is. Hawking objects to the implication that the vast universe exists for the sake of some creatures on a minor planet, but he does not seem to have noticed 1) that the first form of the statement tells us nothing about why the universe came to be, only that we need certain conditions in order to exist in it; and 2) from a philosophical angle, when talking about universes with and without people,

reasons need to be given for denying the title "universe" to a cosmological construction without humans. Thirdly, there is apparently no objection from Hawking's side to the thought that our evolution can be the cause/reason why the universe is.²⁹

There is also a sub-confusion running through the texts on this principle, in that the posited laws about the universe are confused with the universe in itself; that is, while it makes sense to say that laws and theories cannot be stated on the basis of calculation and observation unless there are human observers to do the work, and one must include the history of physics and the cosmological sciences as part of the universe's history, these laws and their workings up to the present moment are still not identical with their events in the universe and still have nothing final to say about the universe's "why". Science still cannot go back to before the Big Bang singularity or beyond the bare fact of the existence of the universe.

Thus, throughout his book, Hawking wrestles with the problem of the "why" of the universe, but, like many others (and because of the results of his scientific work), though he still talks of the possibility of a creator God, he seems to shy away from it.³⁰ Although rightly he points out that to posit such a creator only pushes back the question so that we ask "why" God instead of "why" the universe,³¹ thus getting into an infinite regression regarding God's origin instead of a cosmological singularity, Hawking's latest model of the universe seems to take the gradual edging of God out of the scientific universe a step further³² to the point where humankind is alone in a vastness ultimately explicable in its entirety in terms of natural laws and forces.

If we now look closely at Kierkegaard's works and papers, it becomes very clear that Kierkegaard posits a universe definitely created by God. Unlike Hawking, however, Kierkegaard makes no attempt to explain the universe with the help of science. While admitting the validity of certain scientific pursuits, he is suspicious of attempts by scientists to explain human existence³³ and, instead, makes a theological and philosophical leap of faith in positing a God who has created the world out of nothing. In this, Kierkegaard is firmly in the tradition of the Christian Doctors of the Church: Augustine, Anselm and Aquinas, and also of Balle's Lutheran *Catechism*: the world, the universe, originates from the hands of a creator God who made it out of nothing, that is: did not make it out of anything.³⁴

Also implicit in this thought is the idea that God could well have created the world by divine choice from eternity: the idea of creation is independent of a temporal beginning.³⁵ Following the Christian tradition (including Balle's *Catechism*), Kierkegaard in his writings depicts God as Spirit, eternal, almighty, all-knowing, all-wise, omnipresent, good, merciful, holy, just and truthful.³⁶ Kierkegaard's God is also unchangeable, personal and the Father of mankind; he is love, loving all people equally and wanting people to love him, having created mankind in his image.³⁷ God is also infinite and invisible, but he is active throughout world history in which his providence is manifested even in small things; his presence is necessary to the world every second; he creates and sustains the world, his love is with human beings in everything they do.³⁸

Yet Kierkegaard is a dualist: he posits a qualitative difference between God and humankind and makes a division between time and eternity. He follows traditional Christian theology with its notions of man's creation by God, his fallenness, his redemption in the God-man Christ, a redemption through grace not just for this world, but for ever in heaven after the individual's death.³⁹ Eternity is eternity and time is time, the latter an infinite succession of discrete moments which disappear – it "passes by".⁴⁰ Kierkegaard depicts eternity and time as two fundamentally different realms: the world, as part of the realm of time, is the realm

of the egocentric and the extensive; heaven, eternity, is the realm of the intensive, of the God of perfect altruism and self-sacrifice.⁴¹ The revealed God in Christ is therefore the humble, suffering servant: the high God relates himself paradoxically to appearance in the form of human lowliness. The individual who aspires to eternal life must therefore become like God, give up egocentricity and die to the world.⁴² Time and eternity can, therefore, be viewed not just as opposite each other, but as in opposition to each other where human nature is concerned. Yet since the individual is situated in time, the temporal moment can be seen as ambiguous: the moment is an atom of time but it can also become an atom of eternity, "a continuous state of fulfilment" in which the individual, situated on "the boundary where time and eternity touch each other", each moment uses time in striving to develop the initial potentiality of the eternal self through ethical-religious choice.⁴³ Yet not only can the character of the temporal moment change from mankind's side, it can also change from God's side, as it does when the invisible, unknowable God startlingly intervenes in creation and enters time at the eternal moment of the incarnation of Christ, providing both pattern for imitation and the atonement.⁴⁴ Kierkegaard's universe is therefore very different from that of Hawking. For Kierkegaard even the word "universe" signifies something different, namely that the whole creation serves and points to only one Lord, God the poet, who is lord of all possibilities, who watches carefully over, and is involved in, creation, and finally includes himself in and fulfils it, demonstrating that the basic force of the universe is love, a love that can now be received as well as given by God through Christ.⁴⁵

It is also interesting to note that the first ten lines of Balle's *Catechism* learned by Judge William (Kierkegaard) as a child begin as follows: "It is highly important for us human beings that we learn to know God, since we otherwise would not be able to understand how the world has come into existence".⁴⁶ Thus, on this view, one comes to know the universe through knowing God, and not vice-versa.⁴⁷

Yet Kierkegaard and Hawking can be seen as being in agreement on certain points, though on different grounds. For example, Kierkegaard agrees with Hawking here that the universe is neither arbitrary nor deterministic, but – whereas Hawking rejects arbitrariness because the universe can be interpreted in terms of laws yet with no place for Laplacian determinism – Kierkegaard speaks of possibility and necessity in existence and of a creator God who has foreknowledge but does not predetermine.⁴⁸ Both men agree that humankind is finite, limited, concerning knowledge: Hawking points to the factor of Heisenberg uncertainty, but he also realises that the increase of specialisation in knowledge means that it is not possible for people to master more than small areas of science. Kierkegaard posits limitation and finitude as arising from God's creator activity: a human being is a "derived spirit" set within the boundaries of the finite, and the fact of finitude limits a person in his or her search for knowledge.⁴⁹

It is, however, concerning this point of agreement about the limits of human knowledge that I would like to argue that we must look to the thought of Kierkegaard and not to the theoretical physics of Hawking, when we consider the question of the existence of God, the "why" of the universe. For although (like Kierkegaard) Hawking accepts the limitations of human knowledge, unlike Kierkegaard he seems to do so only in theory. In practice he does not seem to see the implications of this thought for his work. As Hawking admits, when he reaches a point of limitation, he employs Occam's razor and cuts out all features of models of the universe which cannot be observed.⁵⁰ For example, when Hawking encounters the problem of the Big Bang singularity, where theory breaks down so one cannot work back to before the Big Bang, he excludes from his initial model any pre-Big Bang events and their consequences.⁵¹ Although in his book he has several references to the idea of God in a pre-

singularity state,⁵² later he works his way to a mathematical model of the universe that excludes Big Bang singularity and the need of a creator.⁵³ Despite the fact therefore, that (as we saw earlier) he points out that his latest model of the universe (finite time and space without boundary) is "just a proposal" that "cannot be deduced from some other principle" and it may not be easy to see whether his model makes predictions that agree with observation,⁵⁴ he fails to see the implication of this, that here he needs the help of Johannes Climacus to see that his theory in the last end must be truth viewed as an objective uncertainty held fast in (here) an **intellectual** faith commitment.⁵⁵

Since Hawking does, in fact, rely on the factuality of his latest model of the universe, if only as a possibility, this leads him from an apparent agnosticism concerning the possibility of God's existence towards the state of having no need of that hypothesis, and this in turn appears to lead him a step further in his use of Occam, for Hawking not only excludes the mathematically non-observable area of his universe prior to a Big Bang, attempting instead to eliminate its singularity, he also excludes areas that fall outside the mathematics of theoretical physics. He presupposes that the question of the initial state of the universe is a matter solely for theoretical physics (tested as far as possible by the observations of science), but he does not seem to consider that philosophy or religion could have anything concrete to say about his efforts to solve the "why" of the universe. Thus, he rejects at least some fields of research as a waste of time, particularly attempts to link physics with religion and also the field of parapsychology.⁵⁶

Yet when Hawking excludes non-observable, non-quantifiable material from his research, he has unwittingly already begged a number of questions, not least that there are only the four forces as the basis of everything – that there are no other existent and non-quantifiable forces.⁵⁷ Thus his attention is turned away from the condition of the human observer (except concerning the fate of the atoms of our bodies) to the observation of particles and planets, to the singularity situation of Big Bangs and black holes.⁵⁸ The individual takes his place in Hawking's universe as part of the on-going stream of matter and energy, while the interesting singularity attached to the human personality, the death-event in the lives of human beings, is ignored. It is here, however, that Kierkegaard comes into his own in that, in his thinking, he clarifies for us the other questions begged by Hawking.

First, Kierkegaard makes a very careful distinction between subject and object. Not only does Kierkegaard/Climacus view objective truth as objectively uncertain, he also makes a careful distinction between the subjective truth of a genuine faith commitment (whether to a proposition or a way of life) and the uncertainty of objective truth. Also, in order to prevent the objective truth of mathematics from being confused with objective historical truth, he makes an additional distinction between a logical and an existential system.⁵⁹ Thus, while giving the realm of mathematics its proper place as a method or system of logic, he leads us away from intellectual attempts to arrive at the ultimate historical "why" of the universe. It is not that Kierkegaard is afraid to raise these questions, for he does so,⁶⁰ but – since he is concerned with the "how" rather than the "what" of existence⁶¹ – the historical "why" of the universe does not arise for him as an issue in the field of objective knowledge.

So, whereas Hawking's book is permeated with the question of whether one could answer the question of the universe's ultimate origin, Kierkegaard, with respect to the notion of a creator God, makes clear that it is presupposed as the belief-basis for existential ethical-religious living. For Kierkegaard, the attempt to **prove** the existence of God is absurd,⁶² and he firmly moves the originator of the universe from the sphere of the objective to the sphere of the subjective. If one opts to believe in a God, and a personal God at that, then He is not a

"thing" out in the far regions of space-time or beyond, but a subject; thus the being of Kierkegaard's God is one of pure, unselfish, personal, loving subjectivity. God and human beings belong to the realm of subject, although, as a synthesis of the temporal and the eternal, humankind also shares in the objective, material aspect of creation.⁶³ Since (as we have seen) there is a qualitative difference between God and humankind, entailing the paradox that God is both infinitely close and infinitely far away, the way for the human-being subject to find and relate to God-as-subject is on a person-to-person basis: instead of treating God as a possible remote object to be discovered by the observer with the help of mathematics, the individual has to make an "inland journey"⁶⁴ into him or herself in order to discover and face up to what makes God so infinitely distant, namely the factor of sin. Second, through making a distinction between the temporal and the eternal, and between the subjectivity of the human being and objectivity, Kierkegaard points to the possibility of other non-material energies and forces and draws attention to the significance of human selfhood for Hawking's enterprise. On the one hand, Kierkegaard leaves room for another very real force that does not figure at all in descriptions coming from the field of theoretical physics, namely the power or force of love stemming from the realm of eternity as one of pure, loving Spirit.⁶⁵ On the other hand, Kierkegaard's description of the self sets a question-mark by Hawking's apparent presupposition that the human as an observer formulates laws and makes discoveries only through the purely intellectual or mind-side of the personality.⁶⁶ Such a presupposition, too, tends to rest upon, or at least encourage, a purely brain-centred, materialistic view of personality, so that we come back to the activity of excluding any evidence that does not support this picture.

In his relational view of the self, however, Kierkegaard gives a description that, pre-dating the brain-centred model, is nonetheless relevant to the question of Hawking's universe. Especially through his pseudonyms Climacus and Anti-Climacus, Kierkegaard outlines the self as a synthesis of body and soul, a being that feels, thinks and wills. Further, this initial self with which each person starts has a potentiality for eternal life which can be realised through a correct ethical-religious relation to the ideal self, or the self as it should be, based on the God-relationship.⁶⁷ Climacus might be our contemporary, responding to Hawking, when he regrets the tendency to make the intellectual aspect of the self – thought – the highest element in the individual's personality. He points out that, in existence, thought, imagination and feeling are co-ordinate, while Anti-Climacus urges the importance of the capacity of the imagination in relating to ideality, but underlines that the will is the finally decisive element of our personality.⁶⁸

From this picture of the self we can point to two features relevant for Hawking: first, that the nature of the self is more complex as a receptor of information and in its roots than Hawking's approach apparently suggests; and second, the aspect of the self that wills is vital in the choices we make, both morally and in the choice of world-view and what we will or will not consider as evidence in relation to it. In other words, the modern tendency to give priority of significance to the mind seen as reasoning or rationalising agent is, in Kierkegaard's view, an error of considerable magnitude. We respond to, learn about, the universe with the whole of our being, not just through one part of our brain.

Is, however, Kierkegaard's view of God, the universe and the self just another world-picture without any real justification? Are we left with only the bare Kierkegaardian option of chancing our arm on his view or of taking offence⁶⁹ and retreating into the probability of a Hawking-style universe? The answer to this question appears to be "no". There is evidence to support Kierkegaard's God-based model of the universe, and of the observational kind

Hawking looks for from astronomers and applied physicists to support his model, though consideration of it must fall outside the scope of this paper.⁷⁰

We can, however, finally be so daring as to suggest that Hawking may have begged the question of the correct starting-point for a fundamental quest concerning the "why" of the universe. For it may be that Kierkegaard's model can shed light on Hawking's search for a simple unifying principle, though in a different direction from that of the investigation of the four forces. We have noted that Kierkegaard comes to posit the two realms of time and eternity as polar opposites. In his book, Hawking also speaks of opposites, namely particles and anti-particles, making the point that matter in our universe is made out of positive energy.⁷¹ While not wanting in any way to posit a direct analogy between a principle of physics and Kierkegaard's two realms, I would like to suggest that in Kierkegaard's view lies a clue for Hawking: instead of making the search for the unification of the four forces, it might prove more fruitful for Hawking to examine the notion of Kierkegaard's two basic realms with the thought that the looked-for principle of unity or simplicity might rest on an existential difference between plus and minus or zero and one, and have an essential bearing on the nature and condition of the human self. Put in Kierkegaard's words, this would read that "the positive is recognisable by the negative", "to die to the world is the condition for seeing God", or "becoming nothing in this world is the condition for being able to become something in the other world ... they are inversely related to each other".⁷²

We can conclude, then, with two pictures of the universe: Kierkegaard's, which clearly posits areas of uncertainty and difficulty and of the unknown, but does take them into consideration as a part of his model; and Hawking's, in which, in his exclusion of specific areas outside physics,⁷³ he is probably excluding what might lead him in the direction of what appears to be his fundamental concern – the why of the universe and whether or not there is a God as its originator. Hawking's model is exciting, but his concentration on the universe's "why" seems to be at the expense of the "what" and the "how". Thus, far from being in some way outmoded, I would like to suggest that it is Kierkegaard's picture of the universe that in the last resort takes all phenomena into consideration and does not beg questions. Instead, he underlines the notion of belief, risk and offence and, where God is concerned, points away from intellectual observation to the possible choice of existential commitment and experience through the leap of faith. Unlike Hawking, Kierkegaard clearly perceives the same truth about the search for God that was enunciated by the author of *The Cloud of Unknowing*: "He may well be loved, but not thought. By love he can be caught and held, but by thinking never".⁷⁴

APPENDIX

Concerning the validity of Kierkegaard's world-view, there is, in fact, evidence to support it, though what follows does not in any way pretend to be the result of exhaustive investigation. Rather, it is offered as indications suggesting further lines of inquiry.

First, there is an amount of evidence pointing to the fact that we do not acquire knowledge only through the actively reasoning brain. It seems to be an acknowledged fact that ideas and inspired flashes of genius often occur when the individual concerned is relaxed and not consciously using the rationalising aspect of the brain; conscious attention to a problem can often hinder its solution. This phenomenon is pointed out by, for example, Rosalind Heywood in her research into parapsychological experience,⁷⁵ but Hawking himself gives us an example of an important scientific breakthrough he made, not actively at work, but when he was relaxed off duty at home.⁷⁶ If we look at the matter from the perspective of religion,

then Kierkegaard's emphasis – not only on the limitation of the intellectual side of the mind but also on the need for the humble leap of faith instead of pride and arrogant intellectualism – corresponds well to the emphasis in religious literature on putting aside knowledge and the activity of the mind in order to achieve knowledge of God, a God-relationship, through a humble will.⁷⁷

Second, that a brain-centred view of personality is possibly not the true picture is also indicated in neurology. For example, neurologist C. W. M. Whitty in a paper *Changes in Conduct and Personality Following Localized Brain Lesions*, points out that, with time, after such damage it seems as if "the personality has some self-organising capacity, and draws together and re-imposes its pattern on the functioning of the damaged brain". One can also note that Wilder Penfield's research into the mind seems to indicate a clear distinction between the human brain and the human "I".⁷⁸ These observations, indicating the correctness of a non-brain-centred view of personality, are supported by considerable evidence from the fields of parapsychology and religious experience. (Such evidence may also imply that the individual does in fact survive death.)⁷⁹

Third, we can then turn to two areas of research rejected by Hawking, namely that of parapsychology and religion. Hawking views parapsychology as a fraudulent "waste of time",⁸⁰ but the work of serious researchers⁸¹ such as Rosalind Heywood and others indicates the validity of this field of research and tends to support the Kierkegaardian rather than the Hawking picture of the universe where the nature of the self is concerned.⁸² Similarly, although Hawking speaks negatively of the attempt to link religion with physics, it is difficult to dismiss the work of (for example) Alister Hardy and the Religious Experience Research Centre in Oxford whose careful work seems to indicate the possibility of a spiritual dimension beyond our world.⁸³ This again seems to agree with the Kierkegaard rather than the Hawking model of the universe and coincides with insights from the classics of world spiritual literature.⁸⁴

NOTES

1. Stephen W. Hawking: *A Brief History of Time*, Bantam Press, 1988, p.vi. Since this paper was written in 1990, it does not discuss Hawking's later publications.
2. Hawking, p.174.
3. Hawking, pp, x (Carl Sagan), 175, 116, 136, 141.
4. Hawking, p.37.
5. In particular, 1 see Kierkegaard's use of indirect communication (conducive to a non-dogmatic, exploratory attitude), his distinction between subjectivity and objectivity, and his view of the self, as making him highly relevant to 20th century discussion of problems concerning the relation between religion and physics.
6. John Boslough: *Stephen Hawking's Universe*, Fontana/Collins, 1989, p. 13; cf. Hawking, p.10: "The eventual goal of science is to provide a single theory that describes the whole universe."
7. Hawking, pp.36-40, cf.6, 8-9, 23, 33; see also index under general and special relativity; also Boslough, pp.29-30, 38-9.
8. Boslough, p.13; Hawking, pp.70-74.
9. Hawking, pp.11-12.

10. Hawking, pp.74, cf.11-12, 8-9, 117.
11. Although Hawking and others strive towards such a theory, some physicists deny the possibility of achieving it: Hawking, pp.11-13, 165-7; Boslough, pp. 13-14, 126.
12. Hawking, pp. 10-11; cf. Boslough, p.110.
13. Hawking, pp.10-11, 116; cf. Boslough, pp.110-111.
14. Hawking, p.11; Boslough, p.111.
15. Hawking, pp.34, 50, 8-9, 46, cf.122; Boslough, p.48.
16. Hawking, pp.115, 173; Boslough, pp.94-5.
17. Hawking, pp.116, 136, 138.
18. Hawking, pp.136-7; cf. Boslough, p. 14.
19. See especially, Hawking, ch.8.
20. Søren Kierkegaard, *Concluding Unscientific Postscript*, tr. by Howard & Edna Hong, *Kierkegaard's Writings XII* (2 vols.), Princeton University Press, 1992 – CUP Book One, chs. I & II. Cf. Hawking, pp.10, 137, 167-8.
21. In his work on the needed quantum theory of gravity. Hawking operates with the mathematical concept of imaginary time, removing the distinction between time and space, but this does not rule out the actual conditions that would prevail if, for example, it were possible for an astronaut to encounter the phenomenon of a singularity. He states, however, that it is meaningless to ask whether "real" or "imaginary" time is "real", because it is simply a matter of which is the more useful description. See Hawking, pp.133-4,138-9. One may, however, suggest that Hawking's move to imaginary time is a further step away from the realm of actual existence where a solution to the problems of the origin of the universe and God's existence may actually lie.
22. Boslough, p. 105; Hawking, p. 133, cf.139.
23. Hawking, p. 175, cf. pp.116, 136, 141.
24. See Hawking, pp. ix, 13, 175 on the "why", and p.169 where he says: "our goal is a complete **understanding** of the events around us, and of our own existence." On the universe as not arbitrary or deterministic, see Hawking, pp.122-3, 53-5, 172.
25. Hawking, pp.125, 127; Boslough, pp.104, 100-2.
26. See Hawking, pp.9 & 125, where he still speaks of the possibility of a creator God.
27. Hawking, pp.183, 124, cf.125.
28. Boslough, pp.102, 104.
29. Boslough, pp.102-104, cf. Hawking, pp.124-7, 132, 137. Hawking never comments on Boslough's statements in his own book.
30. Hawking, pp.46-7, 116, 122-7, 136, 140-1, 166, 173-4.
31. Hawking, p. 174.
32. Cf. Hawking, p.172, re Laplace's determinism: "God was confined to the areas that nineteenth-century science did not understand."
33. Søren Kierkegaard's *Journals and Papers*, ed. & tr. by Howard & Edna Hong, Indiana University Press, 1967-78, 7 vols. – JP III, 2806, 2818; V, 5092; III, 2807-2817, 2819- 2824.
34. JP III 2570; IV 4571, 4412; II 1301, 1251, 1299, 2099, 1224; Søren Kierkegaard: *Either/Or*, tr. H. & E. Hong, *Kierkegaard's Writings III & IV*, Princeton University Press, 1987 – EO I p.236; Søren Kierkegaard: *The Concept of Anxiety*, tr. Reidar Thomte & Albert Anderson,

- Kierkegaard's Writings* VIII, Princeton University Press, 1980 – CA p.83 ff; Søren Kierkegaard: *Stages on Life's Way*, tr. H. & E. Hong, *Kierkegaard's Writings* XI, Princeton University Press, 1988 – SLW p. 122, cf. CUP p.260. See also on God as creator out of nothing, in Augustine, Anselm and Aquinas, references in (eg) F.C. Copleston: *Aquinas*, Penguin Books, 1955, pp.70-1, 141-8, and Copleston: *A History of Philosophy* I-VIII, London, Burns Gates & Washbourne Ltd., 1946-66, II pp.74-7. Nicolai Edinger Balle: *Laerebog i den Evangelisk-christelige Religion indrettet til Brug i de danske Skoler*, Copenhagen 1824.
35. According to Augustine (see Hawking, p.8), time did not exist before the beginning of the universe.
 36. Balle, pp.6-7, 12-16; JP III 1414; CUP p.332; Søren Kierkegaard; *Kierkegaard's Attack Upon Christendom*, tr. W. Lowrie, Princeton University Press, 1968 – AX p.157; *The Lily of the Field and the Bird of the Air*, Søren Kierkegaard's *Samlede Vaerker*, udg. A.B. Drachman, J.L. Heiberg & O. Lange, Copenhagen 1901-06 – SV XI, p.15; AX p.157; Søren Kierkegaard: *Eighteen Upbuilding Discourses*, tr. H. & E. Hong, *Kierkegaard's Writings* V, Princeton University Press, 1990 – UD p.35, 40; Søren Kierkegaard: *The Gospel of Suffering and the Lilies of the Field*, tr. D. F. & L. M. Swenson, Augsburg Publishing House, 1948 – GS p.92; AX p.252-4; UD p.25.
 37. Søren Kierkegaard: *For Self-Examination and Judge For Yourselves!*, tr. W. Lowrie, Princeton University Press, 1941ff – FSE pp.222-240; JP II 1452, 1431, 1445, 1446, 1368, 1311.
 38. JP II, 1409, 1382, 1307, 1399, 1308, 1313, 1375, 1366.
 39. JP II, 1377, 1383, 1432, 1420, 1453, 1440, 4803. On Kierkegaard's view of life after death see especially note 26 in my paper: "Fighting for Narnia – Søren Kierkegaard and C.S. Lewis" published in *Kierkegaard on Art and Communication*, Macmillan 1992, pp.137-149.
 40. CA pp.85-7; cf. JP IV 4792.
 41. JP IV, 4801, 4810, 4813; Søren Kierkegaard: *The Concept of Irony*, tr. H. & E. Hong, *Kierkegaard's Writings* II, Princeton University Press, 1989 – CI p.315.
 42. JP II 1389, 1433, 1432, 1410, 1411, 1444; I 1005, 1006.
 43. JP m 2740; CA p.88; JP I 842, 834; Søren Kierkegaard: *Purity of Heart*, tr. Douglas V. Steere, Harper & Brothers, New York, Torchbook edition 1956 – PH p. 102.
 44. JP II 1382, 1430; Søren Kierkegaard: *Philosophical Fragments*, tr. H. & E. Hong, *Kierkegaard's Writings* VII, Princeton University Press, 1985 – PF pp.18, 51-2; JP II 1391, 1432.
 45. JP II 1387, 1391, 1445, 1382.
 46. EO II pp.266-7.
 47. At first sight, it might seem as if Kierkegaard espouses a two-decker version of the old three-decker universe, with God sitting on a throne in heaven waiting for the saved, while the damned remain in a Kierkegaardian version of hell, cut off by themselves in despair (Søren Kierkegaard: *The Sickness unto Death*, tr. H. & E. Hong, *Kierkegaard's Writings* XIX, Princeton University Press, 1980 – SD p.28). A closer look at Kierkegaard's world-view, however, shows that despite poetic language about God, he is as careful as (for example) the 14th century author of *The Cloud of Unknowing* not to indicate that the next world is to be viewed in any way materialistically (*The Cloud of Unknowing*, Clifton Wolters, Penguin Books, 1961, 1978, chs. 51-62, esp. chs. 60-61).
 48. Hawking, pp.53, 172, 174; SD p.36; PF pp.79-81; JP II 1449, III 3542-3544. It needs be noted, however, that Hawking considers the question of freedom only from a functional human perspective. Laplacian determinism cannot effectively be applied to human behaviour, but Hawking does not rule out that the universe is ultimately deterministic (p.55).
 49. Hawking, pp.54-5, vi, 167-8; JP II 1348; CUP pp.243, 246.

50. Hawking, pp.55, cf.46, 125.
51. Hawking, p.46, cf. Boslough, p.95.
52. Hawking, pp.11, 122, 125, 136, 166, 173.
53. Hawking, pp.134ff. esp. p.136; 141, 173-4.
54. Hawking, p.136-7.
55. CUP, p.203.
56. Boslough, pp.49, 104-5, 18-19.
57. Although Hawking does posit the possibility of other dimensions and universes (Hawking pp.123, 162).
58. Boslough, p.96; Hawking, pp.46, 173. It is probably because Hawking realises that "people are not quantifiable" (Boslough, p.51, cf.110), that human beings are viewed only in their role of observer (Boslough, p. 104).
59. CUP, see esp. pp.109-125.
60. E.g. PH p.101: "Why was an immortal spirit placed in the world and in time ...?"
61. CUP p.202-3.
62. JP II 1334, cf.1314.
63. JP II 1349, 1382, 1449, 1410; CA p.85.
64. JP II 1451.
65. The concept of spiritual force or energy is found elsewhere in the Christian tradition – e.g.: a Catholic philosopher describes man as an embodied spirit composed of material and spiritual energy in union, a spiritual energy being defined as: "a conation, a volition, a will." E. I. Watkin: *The Balance of Truth*, Hollis & Carter, London, 1943, p.29.
66. Thus, Hawking talks about the memories of brains and computers (Hawking, pp. 146-7), and he sees future research into the problem of the universe as a concentrated effort on understanding the four forces in which computers will take over altogether in theoretical physics (Boslough, pp.105-6).
67. JP I 83-5; SD pp.13-14, 31; CUP p. 345-6.
68. CUP pp.303-4, 343-4, 346-7; SD p.31; Søren Kierkegaard: *Practice in Christianity*, tr. H. & E. Hong, *Kierkegaard's Writings* XX, Princeton University Press, 1991 – PX p.186-7.
69. CUP p.585.
70. Though see my appendix for some comments.
71. Hawking, pp.68, 76, 106, 129.
72. JP I 1006; IV 4814. Cf. also, e.g., UD p.316, and JP IV 4363; VI 6924, 6918.
73. Note that this exclusion is in relation to his work in theoretical physics – though, while Hawking does not suggest he excludes religion as such, he does reject parapsychology, see note 58 above.
74. *The Cloud of Unknowing*, p.68.
75. Rosalind Heywood: *The Infinite Hive*, Pan Books, London, 1964, p.63; Rosalind Heywood: *The Sixth Sense*, Chatto & Windus, London, 1959, p.197; cf. Boslough, p.105 & David Hay: *Exploring Inner Space*, Penguin Books, 1982, pp.183-4, 186-7.
76. Hawking, p.99.
77. PF pp.39, 44; EO II pp.339-354; UD; PH; *Cloud of Unknowing*, ch.43, cf.3, 6 & 7, cf. pp.65-6, 94.

78. C. W. M. Whitty, in *Biology and Personality A Symposium*, ed. Ian Ramsey, Blackwell, Oxford, 1965, pp.139-149, esp. p.144. I am indebted to Dr James Loder for drawing my attention to the work of Wilder Penfield, e.g.: *The Mysteries of the Mind*. See here: James E. Loder & W. Jim Neidhardt: *The Knight's Move: The Relational Logic of the Spirit in Theology and Science*. USA, Helmers & Howard, Colorado Springs, 1992, pp.43-5.
79. Heywood: *Infinite Hive*, pp.113-15; Alister Hardy: *The Spiritual Nature of Man*, Clarendon Press, Oxford, 1979ff., pp.35-38. One may perhaps want to add to this the work of (e.g.) Raymond Moody concerning out-of-the-body experiences: *Life After Life*, Bantam Books, 1976 and *Further Investigations of Life After Life*, Bantam Books, 1978.
80. Boslough, pp.18-19.
81. By "serious researchers" I mean particularly those who, in presenting (well-documented) evidence, also first diligently seek to see if the phenomena in question can be given other explanations before turning to parapsychological or religious causes.
82. Hawking's rejection of ESP appears to be based on apparent failure of ESP in the Duke University experiments in the 1950s (see Michael White & John Gribbin: *Stephen Hawking A Life in Science*, Viking/Penguin, 1992, pp. 15-16, 170), but Heywood clearly and interestingly suggests why ESP does not always work, *Infinite Hive*, pp.58, 63, 121-2, 176-7, 182-4, 243-7.
83. Alister Hardy: *The Spiritual Nature of Man*.
84. See, for example, Sidney Spencer: *Mysticism in World Religion*, Pelican Books, 1963, pp. 328-9.

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Kierkegaard's God and Hawking's Universe was first given as a paper (*Kierkegaards Gud og Hawkings Univers*) to the Søren Kierkegaard Society at Copenhagen University on 29th November 1990, and in English at the State University of Milan in January 1991; it was also delivered at The Free University, Brussels, in March 1991. It is published in April 1997 at the request of the Religious Experience Research Centre. A different version of the paper (*The Relevance of Kierkegaard to the Question of God in Stephen Hawking's Physics*) was given at the Third Biennial Conference of the International Society for the Study of European Ideas, at Aalborg University in August 1992.

Since then Julia Watkin has further developed her thinking on the subject in *Boom! The Earth is Round! On the Impossibility of an Existential System* – a paper given at the Australasian Association of Philosophy conference in July 1996, and at the Kierkegaard Society section of the Annual Meeting of the American Academy of Religion in New Orleans in November 1996. This paper will be available shortly in *International Kierkegaard Commentary* (vol. *Concluding Unscientific Postscript*) ed. Robert L. Perkins, Macon, GA: Mercer University Press.

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