

Science and the General Resurrection

Eric Steinhart, Department of Philosophy, William Paterson University, Wayne NJ 07470, USA. Email: <esteinhart1@nyc.rr.com>, <steinharte@wpunj.edu>. <www.ericsteinhart.com>

ABSTRACT: One good way to demonstrate the compatibility of resurrection with science is by working through a series of resurrection theories that are increasingly naturalistic. We review resurrection by revival, by reassembly, by replication, and by regeneration. These theories are not compatible with science. We then turn to a theory of resurrection involving rebirth and recreation of the body. We develop a theory of resurrection by revision. Resurrection entails the revision of an entire life. Resurrection by revision is compatible with science and is supported by theological arguments.

1. Introduction

Among the many models proposed for science-religion interaction, it is arguable that a dialectical model is most productive. We think of dialectic as rational revision. Hence our conception of dialectic is more Socratic than Hegelian.¹ An application of the dialectical model starts with an initial thesis. The initial thesis is some traditional religious doctrine. The initial thesis provokes a set of scientific objections. The scientific objections drive us to develop a revised thesis. The revision aims to reconcile the conflicting scientific and religious assertions. The revision serves as the next thesis for the next round of dialectical development. We work through a series of revisions until we have a doctrine that is maximally consistent with both science and religion.

We will apply this dialectical model to the doctrine of the resurrection. We show that working out the meaning of the resurrection leads to a theory that is compatible with natural science while remaining faithful to the essential religious idea. The initial thesis is the original New Testament theory of the resurrection as the revival of a corpse. We work through several dialectical revisions of the original New Testament theory. We work through a series of resurrection theories. The series includes: resurrection as reassembly; as replication; and as regeneration. The series does not include every resurrection theory ever proposed. Some resurrection theories clearly lie outside of the dialectical series.² We believe this series converges to a revision theory of resurrection. We will argue that the revision theory is maximally consistent with both religion and science.

2. Resurrection by Revival

The theory of resurrection as revival is one of the main theories of resurrection in the New Testament. The theory of resurrection by revival goes something like this: (1) An earthly body is born. (2) The earthly body dies and is buried in its grave. (3) At some

later time, the grave opens and the body is rises out of it. God brings the corpse back to life. It is revived or re-animated. Many verses refer to the opening of graves and the raising of the dead.³ Jesus revives Lazarus and the daughter of Jairus.⁴ Peter revives Tabitha (Acts 9:36-41). The revival of Jesus is obviously the main New Testament example of resurrection. One of the most famous revival stories is the resurrection of Lazarus:

Now a certain man was ill, Lazarus of Bethany . . . and then [Jesus] said to them, Our friend Lazarus has fallen asleep, but I go to awake him out of sleep. The disciples said to him, Lord, if he has fallen asleep, he will recover. Now Jesus had spoken of his death, but they thought that he meant taking rest in sleep. Then Jesus told them plainly, Lazarus is dead; . . . But let us go to him. . . . Now when Jesus came, he found that Lazarus had already been in the tomb four days. . . . it was a cave, and a stone lay upon it. Jesus said, Take away the stone. Martha, the sister of the dead man, said to him, Lord, by this time there will be an odor, for he has been dead four days. . . . So they took away the stone. And Jesus lifted up his eyes and said, Father, I thank thee that thou hast heard me. . . . When he had said this, he cried with a loud voice, Lazarus, come out. The dead man came out, his hands and feet bound with bandages, and his face wrapped with a cloth. Jesus said to them, Unbind him, and let him go. (John, 11: 1 – 44)

The theory of resurrection as revival has a basis in primitive biology. The Bible often seems to treat death as a passage into sleep and resurrection as a re-awakening.⁵ This sleep is a kind of suspended animation. It is a kind of *cryptobiosis*. Cryptobiosis is a reversible slowing or cessation of metabolism (Storey & Storey, 1990). For a clear example of reversible cessation of metabolism, consider the *tardigrades* (Kinchin, 1994: ch. 6; Wilson, 1999: sec. 5.4). Tardigrades are microscopic aquatic animals. If their habitat dries up, they turn into little dehydrated balls called *tuns*. Tuns can survive temperatures as low as minus -200C (-328F); temperatures as high as 151C (304F); freezing and thawing; high vacuums; high X-ray and ultraviolet radiation. Tuns survive these conditions because they are dried-up and have stopped metabolizing. But the cessation is reversible. If conditions become favorable for metabolism, those conditions can turn a tun back into a tardigrade. When a tun is rehydrated, it is revived or re-animated. It is resurrected.

We might try to argue for resurrection like this: Human animals are like tardigrades. When a human animal dies, it changes into a corpse. St. Paul presents the image of the buried corpse as a kind of seed (1 Corinthians 15: 36 – 49). As such, it is very much like a tun. It is a cryptobiotic human. Just as a tun can be revived by natural processes, so a corpse can be revived by natural processes. And just as no miracles are required for the revival of a tun, so no miracles are required for the revival of a corpse. On the day of the general resurrection, the natural conditions will be right and the corpses will be revived. Of course, science refutes the idea that a corpse is like a tun. A tun is a stable structure that can persist for a very long time. A tun carries all the information needed for the restoration of the metabolism of the tardigrade. But a corpse is an unstable structure that quickly disintegrates and dissolves. Any information it carries is rapidly corrupted.

Some corpses might be frozen or otherwise preserved. But most corpses dissolve and disintegrate. Their atoms are scattered and taken up as parts of other living things. Some corpses are burned; others are eaten by animals or even cannibals. And if there is no corpse, then there is no corpse to revive. There is nothing in the grave to be raised. One might argue that the corpse exists as a widely distributed network of atoms. All that has to be done is to reassemble these atoms. This leads to the reassembly theory.

3. Resurrection by Reassembly

The theory of resurrection by reassembly goes like this: (1) An earthly body is born. (2) It dies and disintegrates. (3) God or the soul tracks the smallest last parts of the earthly body (e.g. its atoms) after death. At the time of the resurrection, these atoms are brought back together in a way that recreates the old earthly body. This reassembly is the second birth. It is the resurrection. The reassembly theory perhaps originates with Ezekiel's vision of the valley of dry bones (Ezekiel 37: 1-14).⁶ It is the dominant classical theory of the resurrection (Bynum, 1995). A precise description of the reassembly of the atoms of the earthly body is given in a fragmentary work ascribed to the early church father Justin Martyr. Here is Martyr's description:

Again, according to Epicurus, the atoms and the void being indestructible, it is by a definite arrangement and adjustment of the atoms as they come together, that both all other formations are produced, and the body itself; and it being in course of time dissolved, is dissolved again into those atoms from which it was also produced. And as these remain indestructible, it is not at all impossible, that by coming together again, and receiving the same arrangement and position, they should make a body of like nature to what was formerly produced by them; as if a jeweler should make in mosaic the form of an animal, and the stones should be scattered by time or by the man himself who made them, he having still in his possession the scattered stones, may gather them together again, and having gathered, may dispose them in the same way, and make the same form of an animal. And shall not God be able to collect again the decomposed members of the flesh, and make the same body as was formerly produced by Him? (Justin Martyr, 114-165: 297)

A first problem with the reassembly theory is that tracking and reassembling the atoms is miraculous. At the time of resurrection, God or the soul needs to exert forces on the atoms. These forces cannot be natural. The accelerations, velocities, and positions of the atoms will violate natural laws (the laws of motion). The energy required to move these atoms in unnatural ways is either taken from a natural source in an unnatural way or is unnaturally added to the universe from outside (thus violating the law of the conservation of energy). So the reassembly theory unfortunately relies on miracles.

A second problem for the reassembly theory concerns its location of the resurrection body in the future of our physical universe. The reassembly theory is a one-universe

theory. It entails that the resurrection body is a material thing located at a space-time region in our universe. Since that is a physical claim, we can see whether it is consistent with physics. If these bodies are put on planets around stars, then they will someday be incinerated. And physics paints only grim pictures of the future history of our universe. Perhaps the universe will end in heat death with the disintegration of its protons. Perhaps it will end in a gravitational Big Crunch in which all matter is squeezed into a structureless singularity. There can be no infinitely long lives in our universe. So any theory that promises resurrection in our universe is not a theory of everlasting life. Of course, God can change the laws of nature. But such changes are miraculous.

A third problem is that the identities of the atoms in an earthly body are utterly irrelevant to its identity. Bodies change their atoms over time. Bodies do not persist like mere masses of matter (Locke, 1690: II.27.5-9). Body persistence is pattern persistence. Wiener (1954) says: "We are not stuff that abides, but patterns that perpetuate themselves. (p. 96) . . . the individuality of the body is that of a flame rather than that of a stone, of a form rather than of a bit of substance. (p. 102)". Farmer & Belin (1991: 818) say "*Life is a pattern in space-time*, rather than a specific material object. . . . It is the pattern and set of relationships that are important, rather than the specific identity of the atoms". Since the identities of the atoms make no difference for the identity of the body, the resurrection body can be made out of any atoms at all. We shift from reassembly to replication.

4. Resurrection by Replication

The theory of resurrection by replication states something like this: (1) An earthly body (call it *Original*) is born and lives. (2) Original dies and disintegrates. Its life does not continue. It is not suspended. Its life is disrupted by death. (3) At the time of the resurrection, God takes some atoms and arranges them to make a replica of Original (call it *Replica*). Resurrection by replication is discussed by Parfit (1971b) and Reichenbach (1978). But it most closely associated with Hick (1976: ch. 15):

I wish to suggest that we can think of [the resurrection of the person] as the divine creation in another space of an exact psycho-physical 'replica' of the deceased person. . . . it is logically possible for there to be any number of worlds, each in its own space . . . And the idea of bodily resurrection requires (or probably requires) that there be at least two such worlds, and that when an individual dies in our present world in space number one he is either immediately or after a lapse of time re-created in a world in space number two (pp. 279 - 280).⁷ . . . The picture that we have to consider is one in which Mr. X dies and his 'replica', complete with memory, etc., appears . . . as a resurrection 'replica' in a different world altogether, a resurrection world inhabited by resurrected 'replicas' — this world occupying its own space distinct from the space with which we are familiar. . . . Suppose then that I exist, not as a disembodied consciousness but as a psycho-physical being, a psycho-physical being exactly like the being that I was before death, though existing now in a different space. I have the experience of waking

up from unconsciousness, as I have on other occasions woken up from sleep; and I am no more inclined in the one case than in the others to doubt my own identity as an individual persisting through time. I realize . . . that I have died, both because I can remember being on my death-bed and because my environment is now different and is populated by people some of whom I know to have died. . . . Resurrected persons would be individually no more in doubt about their own identity than we are now, and would presumably be able to identify one another in the same kinds of ways and with a like degree of assurance as we do now. (pp. 285)

An important difference between Hick's theory and previous theories is that Hick posits a distinct cosmic domain for the resurrection (1976: 279 – 280, 285). Actual physical reality is split into an earthly domain and a resurrection domain. We may refer to these domains as universes (see Leslie, 1989: ch. 4). Hence actual physical reality is split into an earthly universe and a resurrection universe. Events in the earthly universe are not spatially related to events in the resurrection universe (there is no path from one universe to the other). Events in the earthly universe are temporally related to events in the resurrection universe. Hick says they share the same timeline. Hence the resurrection universe is a *parallel universe*. Events in the resurrection universe are lawfully correlated with events in the earthly universe (1976: 287). It is a law of nature that when an earthly body dies, a replica of it appears in the resurrection universe. Perhaps this law of nature is a version of the Final Anthropic Principle.⁸ It is not clear whether this lawful connection is causal. We can perhaps say only that events in the resurrection universe are *entangled* with events in the earthly universe. The entanglement is sufficient for the flow of information.

One might object that the existence of multiple universes is implausible. We reply that current cosmology supports the existence of multiple universes. A large literature exists on multiple universes in current cosmology. Leslie (1989: ch. 4) and Tegmark (2003) provide accessible introductions. Hick is not positing a plurality of Lewisian possible worlds. The earthly and resurrection universes are spatially separate parts of physical actuality. These alternative universes can have different natural laws. Hence they might support a resurrection physics that is more biologically friendly (that permits longer and healthier lives). Hick thus avoids worries about the future fate of our universe.

One might object that the existence of a parallel resurrection universe is not consistent with Scripture. The Bible seems to imply that the resurrection life begins in a new heaven and a new earth (Isaiah 65: 17; Isaiah 66: 22; 2 Peter 3: 13; Revelations 21:1). To say that there will be a new heaven and new earth implies that there will be another heaven and another earth. The resurrection will take place in another universe. But this resurrection universe is not a parallel universe. It is a *later* universe. For the sake of greater consistency with Scripture, Hick's theory must be modified. The resurrection universe is not parallel but later. Various cosmologies support the idea that one universe can be followed by another. Perhaps our universe ends in a Big Crunch and this Big Crunch is followed by another Big Bang and another universe (Leslie, 1989: 4.35 – 4.40). We don't need to worry about the physical details. Any mechanism for generating a

series of universes is fine. Of course, we don't know whether any such mechanism is operative. The existence of a later resurrection universe involves a speculative extension of current science.

Although traditional Christian theology posits only a single resurrection, Hick posits a series of resurrections. One might argue that the image of Jacob's ladder (Genesis 28:12) justifies a series of steps rising from earthly existence to God. But that is scant justification for a series of resurrections. Hick's reasoning is more abstractly theological. If the purpose of human life is to rise towards divine perfection, Hick says it must rise towards that perfection in stages. He says that the post-mortem existence of every human "occurs in successive sections rather than as one continuous unit. . . . periodic death (like periodic sleep) divides up an existence which, as finite creatures, we can only live in limited phases" (1976: 413 - 414). Hick posits "a plurality of lives in a plurality of worlds; . . . each stage will have the relative autonomy which makes it a 'real life', with its own exigencies and tasks and its own possibilities of success and failure" (1976: 419). Hick says that a human career consists of "a series of lives, each bounded by something analogous to birth and death, lived in other worlds in spaces other than that in which we now live" (1976: 456). On Hick's theory, the series of resurrections is a kind of pilgrim's progress. It is the growth of the person towards the maximum of human perfection. He argues for "the picture of the human person progressing through ever higher spheres of existence towards a final state which may, I shall suggest . . . transcend individual ego-hood" (1976: 421). The physical model of Hick's series of resurrections is a series of universes strung out on a great timeline. Perhaps there is a series of Big Bangs and Big Crunches. Anthropic principles might be invoked to argue that the series optimizes the biological friendliness of these universes. Each later universe is more biologically friendly. Its laws are such that the human animals in the universe live longer and better lives.

Although traditional Christian theology says that an earthly life is followed by a single resurrection life, Hick's replica theory supports the possibility of multiple resurrection. If one replica of an earthly body can be made, then many can be made. There are several reasons to affirm multiple resurrection. One might invoke the seed imagery of the New Testament to justify multiple resurrection. Jesus says: "unless a kernel of wheat falls to the ground and dies, it remains only a single seed. But if it dies, it produces many seeds" (John 12: 24). Paul uses the sowing and dying of the seed as an image of the resurrection (1 Corinthians 15). So if a seed that is sown and dies makes many seeds, then there are many resurrections. Dilley (1983) makes a theological argument for multiple resurrection. Every earthly human has many possible futures. It can be perfected in many different ways. If the purpose of resurrection is to realize our perfections, then multiple resurrection is necessary to fully realize the potentials of an earthly human. Dilley writes:

If God's motives for creating a diversity of individual beings was, as many classical theists have claimed, just the creation of perfected instances of an infinite variety of such beings, that God might want to fill in the great chain of being with perfected instances of Hick the plumber and Hick the lawyer in addition to a perfected instance of Hick the philosopher. John Hick presumably has many capacities which could be developed to perfection, and both

resurrection life and multiplication might be needed if the potentialities of the Hick pattern are to be fully realized. (Dilley, 1983: 472).

We believe Dilley's modification of Hick's theory is valid. If we accept both a series of resurrections and a multiplicity of resurrections, then we must argue that each universe is followed by a plurality of later resurrection universes. Every universe is like a parent with a plurality of offspring. The result is a branching tree of universes. Various cosmologies support the picture of a branching tree of universes. Perhaps after each Big Crunch the next Big Bang undergoes turbulent inflation in which dense regions split apart to form a plurality of offspring universes (Leslie, 1989: 4.15 - 4.27; Guth & Steinhardt, 1984; Linde, 1983, 1986). Perhaps the formation of every black hole in our universe triggers a Big Bang that makes another universe (Smolin, 1992, 1997). The idea of a branching tree of universes is speculative but not impossible. We are, of course, primarily interested in the fates of humans in this branching tree. As the result of some basic law, for every body in any universe, for every way the life of that body can be improved, there is some later resurrection universe in which the life of that body is improved in that way. Every earthly life is followed by a plurality of first-generation resurrection lives. Each first-generation resurrection life is followed by a plurality of second-generation resurrection lives. Every earthly life is the root of an endlessly branching tree of lives. And just as the life of a single body can be improved, so the lives of many interacting bodies can be collectively improved. Whole societies are improved from one universe to the next.

A fatal problem is that Hick's replication theory still involves miracles. The miracles occur in the resurrection universe. A replica is not made by a natural combination of atoms. It is not conceived in a human womb. It is not born from a woman. It is not part of any biological process of evolution. The replica appears on the resurrection earth by a kind of spontaneous generation. It does not have any apparent antecedent cause. It appears as if by magic. But that is not naturalistic. Since the resurrection universe is physical, it should work according to laws (and these laws should be causal regularities).

5. Resurrection by Cloning

The theory of resurrection by cloning states something like this: (1) An earthly body (call it *Original*) is born and lives. (2) Original dies and disintegrates. Its life does not continue. (3) At some time in the far future, and at some place far away, there is a planet that very closely resembles earth (call it *Paradise*). Every earthly human has a clone in Paradise. Just as Original was born on earth, so a clone of Original is born in Paradise. Original is resurrected in his or her clone. The cloning theory is motivated by a story told by Shorter (1962).⁹ A similar story is told by Forrest (1995). Forrest is committed to naturalism. He argues that "God will provide us with an afterlife without breaking the laws of nature" (1995: 58). His cloning story goes like this:

Perhaps, then, in a distant part of the universe in the distant future, there would be, apparently by chance but really because God so intended it, a paradise replica of Earth. There are animals in this paradise which look very human, although

their offspring grow up without challenges or education, and indeed with very little worth remembering. At least as children, the neuronal connections for these beings are only influenced by the surroundings to the extent of recording vague memories of their uneventful lives. Instead, their brains develop so that, apparently by chance, the events which occurred to us, in our lives, are stored as apparent memories. And perhaps they could re-live such 'remembered' events in a rather vivid way. Likewise their character, habits and capacities would effortlessly develop so as to be just like those we had. When they mature they have, therefore, apparent memory of having been us, and they have the appropriate character etc. . . . whatever neuronal mechanism underlies consciousness operates only at the end of the whole process, by which time the life of a human being on Earth is totally recorded in one of these replicas. That would ensure an apparent psychological continuity between a life on Earth and the life in this paradise. (Forrest, 1995: 58)

A first problem with the cloning theory is that the paradise replica of earth (Paradise) is located in our universe. It will be destroyed as our universe runs down. We can avoid this unwelcome consequence if, following Hick, we situate Paradise in another universe. If we want full realization of all human possibilities, we need to affirm multiple resurrection. We need to posit a multiplicity of resurrection universes and paradise Earths. Our universe is followed by a plurality of new heavens and new earths. Each new earth is more biologically friendly. It is a Paradise. Every earthly body has a clone in each Paradise. For every way an earthly life can be perfected, there is a clone that works out that perfection.

The main difference between Hick's replica theory and the cloning theory is that the clones are literally born. Hick says each new resurrection life begins with something analogous to birth (1976: 456); but the cloning theory affirms that each new resurrection life begins with a literal birth from a literal womb. Forrest explicitly says that the clones are offspring of parent clones. Genealogical relations are preserved by the cloning relation. Your clone is conceived by the union of the clones of your parents. Your clone is born from a clone of your mother. Since the cloning theory affirms literal rebirth, it has two advantages over earlier theories. The first advantage is that we do not need to invoke miracles to account for the resurrection body. The clones are generated in a natural way. Hick's spontaneous generation problem is avoided. Since each clone is grown from scratch, all defects of its original earthly body can be healed. Genetic defects can be repaired. The second advantage is that the cloning theory is supported by the Biblical conception of resurrection as rebirth (John 3: 1-7; 1 Peter 1:23). For example, Nicodemus wonders how a man can be born when he is old. He says: "Surely he cannot enter a second time into his mother's womb to be born!"(John 3:4). Jesus replies: "Flesh gives birth to flesh, but spirit gives birth to spirit" (John 3:6). This second birth starts a second life in a second universe. It is the birth of a more highly spiritualized body (1 Corinthians 15). We think of this more highly spiritualized body as a biologically more perfect (functional) body.

A second and fatal problem with the cloning theory is that the clones grow up like zombies. They cannot really record memories of their early lives on Paradise. And yet

they really seem to have lives in Paradise before they wake up to remember their earthly pasts (this seems especially clear in the story by Forrest). We can raise an obvious ethical objection: The clones are in fact autonomous persons able to live potentially valuable lives of their own. They should not be zombies. We can also raise a scientific objection: The clones have brains and bodies that work very much like our brains and bodies. They work so much like our brains and bodies that they can record (quasi-)memories of earthly lives. Hence those brains and bodies must be conscious. They can't be zombies. The clones must be autonomous human animals with normal brain functions.

6. Resurrection by Revision

The *revision theory of resurrection* (the RTR) thus goes something like this: (1) An earthly body is born. (2) The earthly body dies and disintegrates. (3) After our universe comes to its end, a later universe begins. The resurrection universe is defined in terms of the earthly universe. It is logically (but not causally) dependent on the earthly universe. Many features of the resurrection universe are *explained* by features of the earthly universe. An improved version of biological evolution runs on the planets of this universe. One of these planets closely resembles earth. Human animals like ourselves evolve there. Every earthly human has a counterpart in Paradise that differs only in that earthly defects are corrected. The birth of this counterpart is the second birth. It is the resurrection.

The RTR is an example of a purely monistic theory of resurrection. It does not affirm any sort of soul-body dualism. As such, it is an extinction – recreation theory of resurrection. When the earthly body dies, the earthly person ends. The life of the old earthly body does not continue in the life of the new resurrection body. We believe there is ample justification in Scripture an extinction – recreation theory like the RTR. The Bible portrays death as extinction. The death of the earthly body is the total and final end of a life (Job 14; Ecclesiastes 3:19-20, 9:10).¹⁰ The New Testament does not stress the continuation of an old life of an old self. The New Testament stresses the *death* of an old self. The New Testament typically presents conversion to Christianity as the death of an old self. But this self does not fully die until the biological death of the sinful earthly body. The earthly body is *destroyed* by death (John 2:19 – 21; 2 Corinthians 5:1-9). An *old* life *ends* with death. Death is necessary for resurrection. The RTR is supported by the seed imagery of the New Testament. Paul writes that "what you sow does not come to life unless it dies" (1 Corinthians 15:36; see also John 12:24). The resurrection is a new birth (John 3: 1-7; 1 Peter 1:23). This new birth starts a new life in a new universe (a new heaven and new earth). One may read Matthew 22:30, 1 Corinthians 15:35-56, and 2 Corinthians 5:1-5 as stressing the discontinuity and distinctness of the earthly and resurrection bodies and lives. Finally, great support for an extinction – recreation theory like the RTR is provided by Romans 4:17: "[Abraham] is our father in the sight of God, in whom he believed, who gives life to the dead and calls into being what does not exist."

Apart from Scripture, there are several other reasons to affirm an extinction – recreation theory like the RTR. The first is that it is supported by the scientific conception of a human person as a human animal. Human animals are entirely physical things. When the body dies, there is nothing that continues. There does not exist any x such that the life of the body continues in x . Since cognition is the activity of the body (of the brain and nervous system), the end of the body is the end of the person. The second reason to affirm an extinction – recreation theory like the RTR is that resurrection entails the perfection of a human animal. But humans have many defects that cannot be corrected by continuity. Continuity cannot repair past existential defects. For example: if a human suffered a horrible childhood, then continuity cannot ever give that human a happy childhood. Past existential defects can only be repaired by revisions of earthly lives. What we want is not continuation of our deficient earthly lives. We do not want to carry the burden in memory of earthly misfortune and failure. We want our lives to be lived over again in more perfect ways. The third reason to affirm an extinction – recreation theory like the RTR emerges from a consideration of the purpose of the afterlife. It is arguable that the purpose of the afterlife is to actualize all the positive potentials of every person. And many of these potentials can only be actualized by living different lives from conception onwards. So if the purpose of the afterlife is to actualize all the positive potentials of every person, then we must posit many resurrection counterparts. We must affirm both multiple resurrection and resurrection by revision. For every way that the life of an earthly body can be improved, there exists a resurrection counterpart of that body whose life is improved in that way. Each counterpart body exists in a full-blown ecosystem that evolved in its own universe. We think these reasons provide ample justification for the RTR.

Although an earthly life does not continue in a resurrection counterpart, it possible to defend the thesis that it *survives* in a resurrection counterpart. Survival is not identity (Parfit, 1971a). An earthly life is described by a *biography*. An earthly biography stands to a resurrection biography as an early and imperfect draft of a manuscript stands to a later and more perfect draft of that same manuscript. Errors are corrected. The meaning is brought out more clearly, more intensely, and more deeply. The life of a resurrection counterpart is logically dependent on the life of its earthly counterpart just as the later drafts of a manuscript are dependent on the earlier drafts. It is *defined in terms of* the earthly life (as an improvement of it). The features of the counterpart are *explained* by the features of the earthly original. This explanatory relation is sufficient for the survival of the whole earthly life in the life of some resurrection counterpart. If you were cloned after your death, at least your genotype would survive in your clone. If your clone's life were similar to your life, the survival would be proportional to the similarity. The degree to which a story survives in a revision of that story is proportional to the similarity. A biography survives in a revision. It is often said that we don't care about our counterparts. But Miller (1992) has done a brilliant job of showing that we do indeed care about our counterparts.

It will be objected that resurrection by revision is not consistent with traditional doctrines of reward and punishment. According to these doctrines, the resurrection body is judged and goes to eternal reward or punishment. We reply that traditional doctrines of eternal

reward and punishment are unjust. They are not consistent with God's goodness. They ought to be replaced with ethically superior doctrines. For example, we might adopt something like Hick's pateschatology and eschatology. According to Hick's *pateschatology*, every human life is a pilgrim's progress towards divine perfection. The purpose of the afterlife is to bring humans closer to God. It is a soul-making journey. Hick (1976: ch. 20) argues that humans are resurrected many times in progressively more complex bodies in progressively more complex universes. Earthly persons are finite; God is infinite; so an infinite series of resurrections is needed for earthly persons to approach the divine perfection. According to Hick's *eschatology* (1976: ch. 22), the series of resurrections converges to a final union with God. If we are to incorporate Hick's pateschatology and eschatology, then we must say that our universe is followed by a first generation set of resurrection universes. Each first generation resurrection universe is followed by a set of second generation resurrection universes. And so it goes. So we must posit an endlessly branching genealogical tree of resurrection universes.

We have already mentioned that various cosmologies are consistent with the notion of a branching tree of universes (these include inflationary cosmologies and Smolin's fecund universe cosmology). But we need more than mere consistency. We need an argument for the existence of a tree of universes. We give two arguments. The first argument is a version of the *fine-tuning argument* (Leslie, 1989). The fine-tuning argument has been used to justify either the existence of a divine designer or the existence of a multiverse (or both). We use it to argue for the existence of multiverse organized like a tree. Our universe is both very complex and has a highly improbable feature: it is biologically friendly (it is *finely-tuned* for life). Among the many explanations for the existence of our universe, the best is the one most consistent with other natural explanations for the emergence of complex things with improbable features. The best natural explanations for the emergence of complex things with improbable features are evolutionary. It follows that the best explanation for the existence of our universe is that it is the product of a super-cosmic evolutionary process. Universes are like organisms. Each has many potential offspring. Only those offspring that increase biological friendliness are born into actuality (they are the potentials that explode into Big Bangs). Any increase in biological friendliness goes hand in hand with an increase in complexity. Just as our universe was born in this super-cosmic evolutionary process, so it will give birth to even more perfect universes.

The second argument for the existence of the tree of increasingly perfect universes is more theological. Leibniz famously argued that God creates only one universe: the best of all possible universes. But it is often argued that there is no best of all possible universes. On the contrary, there is an endless series of ranks of increasingly perfect universes (Reichenbach, 1979; Fales, 1994). God cannot create the best. But God can create every universe in the series of increasingly perfect universes (Forrest, 1981; Coughlan, 1987). God knows the definitions of all possible universes. For any universe, God knows all the more perfect revisions of that universe. The perfection of God entails the actuality of the maximally perfect system of universes. It entails the actuality of a genealogical tree of universes in which each universe is followed by its more perfect variants.

The more perfect universes are more biologically friendly. Bodies live longer in them with fewer failures and misfortunes. A series of universes increasingly approximates biological paradise. The bodies of resurrection counterparts are progressively more perfect. These are increasingly *glorified* bodies (1 Corinthians 15). Augustine describes the super-powers of resurrection bodies in *The City of God*.¹¹ Much current literature is devoted to the amplification of the powers of human bodies. There are many discussions of trans-human and super-human bodies. One of the richest and most detailed conceptions of super-human bodies is developed by the roboticist Hans Moravec (1988: 102 - 108; 2000: 150 - 154).¹² For every way to improve the design of the human body, there is a type of resurrection universe in which human bodies are improved in that way. Any progression of resurrection universes includes a progression of super-human bodies.

The RTR says that every earthly body is the root of an infinite tree of increasingly perfect counterparts. Each earthly body is followed by a set of first generation counterparts (in first generation universes). Each is improved in some way. Each first generation counterpart is followed by a set of second generation counterparts (in second generation universes). These are improvements of the first generation counterparts. They are improvements of improvements. Improvements accumulate. The series of improvements is endless: every n -th generation counterpart is followed by a set of $(n+1)$ th generation counterparts (in $(n+1)$ th generation universes). Each earthly body is the root of a genealogical tree of increasingly glorified resurrection bodies. The successive counterparts rise through all finite degrees of perfection. They become infinitely perfect in the limit.

The theory of resurrection by revision does not violate any laws of the earthly universe. It allows each successive universe to have its own natural laws. It does not require any miracle to connect an earthly body to a resurrection body. The process by which the tree of universes is generated is itself naturalistic. The theory of resurrection by revision has many theological attractions. It is supported by the notion that God fills out the great chain of being with a tree of increasingly perfect universes. It can be fitted into a reasonable pareschatology and eschatology. We have thus arrived at a resurrection theory that satisfies both the demands of natural science and theology.

7. Conclusion

The resurrection of the body is a physicalistic theory of immortality. It is more scientific than theories that involve disembodied immaterial Cartesian souls. But to be fully scientific, resurrection theories have to be made consistent with natural law. They cannot rely on miracles or divine interventions. Universes are causally closed systems. The theory of resurrection as revision is naturalistic. It violates no laws. It may seem that resurrection as revision is far from the classical theories. And yet it is arguable that resurrection as revision preserves the essential insight of the classical theories. The central insight is rebirth rather than continuation. It is the recreation of a life at a higher level of perfection. It is the glorification of the old body in new bodies in new universes.

Notes

¹The *Euthyphro* dialog is a classical (though unfinished) application of the dialectical method. Euthyphro proposes a definition of piety; Socrates raises rational objections; the cycle of definition-objection repeats. Unfortunately, the *Euthyphro* dialog ends without a resolution. It is incomplete. We aim at harmonious resolution.

²We do not include any dualistic theories. We therefore do not include the theory of Aquinas (*Summa Theologica*, Supplement to the Third Part, Arts. 69 - 99). We do not believe that soul-body dualism is taught in the New Testament (see Cullman, 1965; Voss, 1992: sec. 1). A theory that says your soul is disembodied at death and then re-embodied later is a reincarnation theory rather than a resurrection theory. We are interested in the resurrection of the body, not the reincarnation of the soul. And, of course, the existence of an immaterial soul is not consistent with physics. We do not include any theories that involve astral bodies. The existence of an astral body is not consistent with physics. We do not include the body-snatching theory of van Inwagen (1986). The body-snatching theory says that when you die, God takes your body to heaven and puts a replica in its place on earth. Hence the corpses that people bury or burn are replicas. van Inwagen's theory involves obvious violations of natural laws. We do not include the particle-fission theory proposed by Zimmerman (1999). The particle-fission theory says that just before you die, every particle in your body splits into two particles. Thus your whole body splits into two bodies. One of these bodies dies while the other is taken directly to heaven by God. The particle-fission theory is like the Biblical cases of Enoch and Elijah. Since resurrection requires death, the particle-fission theory is not a resurrection theory.

³A partial list of verses referring to the revival of corpses includes: Isaiah 26:19; Ezekiel 37:12-13; Daniel 12:2; Matthew 27: 52-53; Mark 5:38-42; John 5: 28-29; John 11:1 – 12:2; 1 Corinthians 15:52; 1 Thessalonians 4:16. The New Testament contains many references to the revival of Jesus from his tomb and the general raising of the dead.

⁴The revival of Lazarus is in John 11:1 – 12:2; the revival of the daughter of Jairus is in Matthew 9: 18-25 and Mark 5: 22-42. Peter revives Tabitha in Acts 9:36-41.

⁵Death is equated with sleep in Psalms 13:3; Daniel 12:2; Matthew 27:52; Mark 5:38-42; John 11; 1 Corinthians 15; Ephesians 5:14; 1 Thessalonians 4:13 – 16.

⁶Ezekiel is taken by God to a valley full of dry bones. He commands them to come to life. The bones reassemble to make skeletons. The skeletons are clothed with flesh. God causes the breath of life to enter the reassembled corpses, and they are reanimated.

⁷According to Hick, our actual universe is partitioned into a plurality of geometrically closed spaces. These closed spaces are known as *Hubble volumes* in current cosmology (Tegmark, 2003). Due to spatial isolation, we can neither travel to nor observe other Hubble volumes. These Hubble volumes share a common time and are linked by non-local causal laws. Our resurrection replicas are created in a distinct Hubble volume.

⁸According to Barrow & Tipler (1986:23), the Final Anthropic Principle states: "Intelligent information-processing must come into existence in the Universe, and, once it comes into existence, it will never die out."

⁹Shorter describes a possible planet that is populated by clones: "There is in the universe a planet on which people live. Let us call the planet Juno. . . . The Junonians come into being in rather a peculiar fashion. In a certain part of the planet bodies of the normal human sort grow to maturity. While they grow they are in a state similar to a person in a

coma. Periodically these ‘come to life’ and start to walk about and talk in a normal sort of way. . . . they are able to talk English and sometimes other languages too as soon as they ‘come to life’. It also seems to them that they remember doing certain deeds, thinking certain thoughts and witnessing certain events, although these events and deeds they seem to remember certainly did not occur on Juno. . . . Now it is a fact that the occasion when each of these Junonians ‘came to life’ corresponds to the time when someone died in Britain. . . . each Junonian is in appearance, character, and personality very like his [counterpart in Britain] was before he died” (Shorter, 1962: 82). Sutherland (1964: 386) interprets Shorter’s story as a “more or less a possible account of bodily resurrection”.

¹⁰The Bible often refers to the dead body as sleeping (see Psalms 13:3; Daniel 12:2; Matthew 27:52; Mark 5:38-42; John 11; 1 Corinthians 15; Ephesians 5:14; 1 Thessalonians 4:13 – 16). But a corpse is not asleep. Nor is a corpse hibernating. It is not in suspended animation or in any cryptobiotic state. A corpse is dead. We say *x is sleeping* iff *x* does not exist now; but a representative of *x* did exist; and a representative of *x* will exist.

¹¹Augustine, *The City of God*, bk XI ch 23; bk XIII ch 13, 16-20, 22, 23; bk XIV ch 3, 15-16, 19-26; bk XVI ch 8; bk XX; bk XXI ch 2-3; bk XXII ch 10-21, 29, 30.

¹²Our bodies realize a sticks-on-sticks pattern: your trunk (chest and abdomen) is a thick cylindrical stick; your legs and arms are sticks on that stick; your toes and fingers are sticks on those sticks. But why stop there? Why not keep adding sticks, until your resurrection body is like an animated tree. Moravec discusses robotic bodies with the sticks-on-sticks form iterated many many times (1988: 102 - 108; 2000: 150 - 154). He refers to them as “bush robots”. Of course, we need not think of the resurrection bodies as artificial. The sticks-on-sticks pattern is natural. It can be a product of biological evolution.

References

- Adams, F. (1992) Machine persons. *The Personalist Forum* 8 (1), 47 – 55.
- Brennan, A. (1987) Discontinuity and identity. *Nous* 21 (2), 241 - 260.
- Bynum, C. (1995) *The Resurrection of the Body in Western Christianity, 200 – 1336*. New York: Columbia University Press.
- Corcoran, K. (2001) Physical persons and postmortem survival without temporal gaps. In K. Corcoran (ed.) *Soul, Body, and Survival*. Ithaca, NY: Cornell University Press, 201 - 217.
- Coughlan, M. (1987) Must God create only the best possible world? *Sophia* 26 (2), 15 – 19.
- Cullman, O. (1965) Immortality of the soul or resurrection of the dead. In K. Stendahl (Ed.) *Immortality and Resurrection*. New York: Macmillan.
- Davis, S. (1986) Is personal identity retained in the resurrection? *Modern Theology* 2 (4), 329 - 340.
- Dilley, F. (1983) Resurrection and the 'Replica objection', *Religious Studies* 19, 459 - 474.
- Dretske, F. (1981) *Knowledge and the Flow of Information*. Cambridge, MA: The MIT Press.
- Edwards, P. (1997) Introduction. In P. Edwards (Ed.) (1997) *Immortality*. Amherst, NY: Prometheus Books, 1 - 70.
- Fales, E. (1994) Divine freedom and the choice of a world. *International Journal for the Philosophy of Religion* 35, 65 – 88.
- Farmer, J. & Belin, A. d'A. (1991) Artificial life: The coming evolution. In C. Langton, C. Taylor, J. Farmer, & S. Rasmussen, *Artificial Life II*. SFI Studies in the Sciences of Complexity, Vol. 10. Reading, MA: Addison-Wesley, 815 - 840.
- Flew, A. (1976) *The Presumption of Atheism*. New York: Harper & Row Inc.
- Forrest, P. (1981) The problem of evil: Two neglected defenses. *Sophia* 20 (1), 49 – 54.
- Forrest, P. (1995) *God without the Supernatural: A Defense of Scientific Theism*.
- Guth, A. H. & Steinhardt, P. J. (1984) The inflationary universe. *Scientific American* (May), 116 - 128.

- Hales, S. & Johnson, T. (2003) Endurantism, perdurantism and special relativity. *Philosophical Quarterly* 53 (213), 524 - 539.
- Hershenov, D. (2002) Van Inwagen, Zimmerman, and the materialist conception of resurrection. *Religious Studies* 38, 451 – 469.
- Hershenov, D. (2003) The metaphysical problem of intermittent existence and the possibility of resurrection. *Faith & Philosophy* 20 (1), 24 – 36.
- Hick, J. (1976) *Death and Eternal Life*. New York: Harper & Row.
- Hudson, H. (2001) *A Materialist Metaphysics of the Human Person*. Ithaca, NY: Cornell University Press.
- Kinchin, I. M. (1994) *The Biology of Tardigrades*. Chapel Hill, NC: Portland Press.
- Leibniz, G. W. (1916) *New Essays Concerning Human Understanding*. Book II, Ch. 28. La Salle, IL: Open Court Press.
- Leslie, J. (1989) *Universes*. New York: Routledge.
- Lewis, D. (1976) Survival and identity. In A. O. Rorty (Ed.), *The Identities of Persons*. Berkeley, CA: University of California Press, 17 - 40.
- Lewis, D. (1986) *On the Plurality of Worlds*. Cambridge, MA: Blackwell.
- Linde, A. D. (1983) The new inflationary universe scenario. In G. Gibbons, S. Hawking, and S. Siklos (Eds.), *The Very Early Universe*. Cambridge: Cambridge University Press, 205 - 49.
- Linde, A. D. (1986) Eternally existing self-reproducing chaotic inflationary universe. *Physics Letters B* 175 (4) (14 August), 387-502.
- Locke, J. (1690/1959) *An Essay Concerning Human Understanding*. New York: Dover Publications.
- Loughlin, G. (1985) Persons and replicas. *Modern Theology* 1 (4), 303 – 319.
- Mackay, D. (1997) Computer software and life after death. In P. Edwards (Ed.) *Immortality*. Amherst, NY: Prometheus Books, 248 – 249.
- Merricks, T. (1999) The resurrection of the body and the life everlasting. In M. Murray (Ed.) *Reason for the Hope Within*. Grand Rapids, MI: W. B. Eerdmans Publishing Co., 261 - 286.
- Miller, R. (1992) Concern for counterparts. *Philosophical Papers* 21 (2), 133 – 140.

- Moravec, H. (1988), *Mind Children: The Future of Robot and Human Intelligence*. Cambridge, MA: Harvard University Press.
- Moravec, H. (2000) *Robot: Mere Machine to Transcendent Mind*. New York: Oxford University Press.
- Papp, L. (1997) For pioneer surgery patient, death really becomes him: Man was 'killed' to remove brain aneurysm. *The Toronto Star* (20 September 1997, Saturday, Final Edition), A4.
- Parfit, D. (1971a) Personal identity. *Philosophical Review* 80 (1), 3 - 25.
- Parfit, D. (1971b) On 'The importance of self-identity'. *Journal of Philosophy* 68 (20), 683 - 690.
- Polkinghorne, J. C. (1985) The scientific worldview and a destiny beyond death. In G. MacGregor (Ed.) *Immortality and Human Destiny: A Variety of Views*. New York: Paragon House, 180 - 183.
- Quinn, P. (1978) Some problems about resurrection. *Religious Studies* 14, 343 - 359.
- Reichenbach, B. (1978) Monism and the possibility of life after death. *Religious Studies* 14 (1), 27 - 34.
- Reichenbach, B. (1979) Must God create the best possible world? *International Philosophical Quarterly* 19 (2), 203 - 212.
- Shorter, J. (1962) More about bodily continuity and personal identity. *Analysis* 22 (4), 79 - 85.
- Smolin, L. (1992) Did the universe evolve? *Classical and Quantum Gravity* 9, 173-191.
- Smolin, L. (1997) *The Life of the Cosmos*. New York: Oxford University Press.
- Storey, K. B. and Storey, J. M. (1990) Frozen and alive. *Scientific American* 263 (6) December, 92-97.
- Sutherland, S. (1964) Immortality and resurrection. *Religious Studies* 3, 377 - 389.
- Tegmark, M. (2003) Parallel universes. *Scientific American* 288 (5), 40 - 51.
- van Inwagen, P. (1978) The possibility of resurrection. In P. Edwards (Ed.) (1997) *Immortality*. Amherst, NY: Prometheus Books, 242 - 246.
- Voss, S. (1992) Understanding eternal life. *Faith and Philosophy* 9 (1), 3 - 22.

Wiener, N. (1954) *The Human Use of Human Beings*. Garden City, NY: Doubleday Anchor Books.

Young, R. (1970) The resurrection of the body. *Sophia* 9 (2), 1 – 15.

Zimmerman, D. (1999) The compatibility of materialism and survival: The 'Falling elevator' model. *Faith and Philosophy* 16 (2), 194 - 212.