

## Christianity, Science, and Three Phases of Being Human

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### Abstract

The alleged conflict between religion and science most pointedly focuses on what it is to be human. Western philosophical thought regarding this has progressed through three broad stages: mind/body dualism, Neo-Darwinism, and most recently strong artificial intelligence (AI). I trace these views with respect to their relation to Christian views of humans, suggesting that while the first two might be compatible with Christian thought, strong AI presents serious challenges to a Christian understanding of personhood, including our freedom to choose, moral choice itself, self-consciousness, and the relevance of God to our beginning, ending, and being.

Many contemporary thinkers envisage serious conflict between religion and science. The roboticist Hans Moravec writes, “Science seeks objective interpretations of observations, independent of human feelings, tribal values, and even its own traditions. Its mercurial course often subverts religion’s role as social conservator, contradicting religious tenets and creating disturbing new options. Yet, despite a demonstrated potential for societal disruption, science has increasingly usurped religion’s ancient explanations and rules because its material benefits outweighed the costs in peace of mind and social order” (1999, 75). This view of science triumphant is not new. Half a century before, Julian Huxley advocated an evolutionary, scientific humanism. Whereas “earlier religions and belief systems were largely adaptations to cope with man’s

ignorance and fears, ... the need to-day is for a belief-system adapted to cope with his knowledge and his creative possibilities” (1957, 188). According to Huxley, the key to accomplishing this is for religion to abandon its traditional dalliance with the transcendent and “ally itself wholeheartedly with science,” for empirical science will enable human progress through “self-transformation, during which new possibilities can be realized” (1957, 189–90). Of course, suspicions can run both ways; religious people can be suspicious of the metaphysical presuppositions that lie behind naturalistic theorizing (Plantinga 2011).

Perhaps nowhere else than in philosophical anthropology do Christianity, the religion we will employ, and science appear to clash more stridently. Humans, not a god about whom naturalistic, empirical science has nothing to study or pronounce, are the issue. Traditionally, Christians viewed humans as ensouled creatures, intrinsically connected to the transcendent God who implanted in them their vital soul. With Darwinian evolution, the human place in nature becomes biological, established naturally, not divinely. We are the supreme product of extensive evolutionary processes, the result of millennia of genetic mutations culled through natural selection, possessing brains that produce consciousness and its correlates of belief, will, and reasoning. But if advocates of robotics and strong artificial intelligence (AI) have their way, even this biological, evolutionary conception of humans can, must, and will be supplanted by new forms that ultimately instantiate humans as software in complex machines, robotic or computational. Evolutionary science put souls out of business, and strong AI ultimately will do likewise to the biological human. Christianity that endorses divine souls or

teleologically-guided evolution will recede, as have phrenology, alchemy, and astrology, into well-deserved oblivion. Whereas traditional religion promised us immortality through our souls and Neo-Darwinism furnished immortality through our selfish genes, AI immortality will replicate our software-being so that it can be preserved, housed in diverse types of hardware, and even radically altered.

The burden of this paper is to briefly trace the evolution of these views of human beings, hint at issues that arise, and assess prospects for how religious understandings of humans and God, values, and virtues comport with an AI-projected futuristic scenario.

#### Phase One: Humans as Divinely Endowed, Embodied Souls

The traditional (although currently not unanimous) Christian view of human beings is that we are dualistically composed of body and soul (Augustine 1948a, XIX, 3). Creating in his own image, God formed in the human dusty body “a soul endowed with reason and intelligence, so that he might excel all creatures of earth, air, and sea” (Augustine 1948a, XII, 23). Although the soul permeates the body, they are separable at death (Augustine 1948b, XVI, 25). Even when separate from the body, the soul can continue to exist until divinely reunited with a resurrected body in a perfected state, fleshly yet spiritual (Augustine 1948a, XXII, 19, 21).

Influenced by his Neo-Platonism, Augustine was neither the first nor the last Christian thinker to aspire to this anthropological view. Two centuries earlier Irenaeus developed his own triadic view of body, soul, and spirit jointly constituting the human being (2016, V.9.1; V.6.1). Humans have their source, nature (in God’s image), and end in God and cannot be truly conceived apart from that enlivening connection. Even

Thomas Aquinas, although technically not a dualist in maintaining that the soul is the substantial form and animating principle of the body, held that the person is composed of soul and body. The soul as incorporeal, subsistent, and incorruptible naturally “survives the dissolution of the body” (1945, Q75, arts. 1–6).

This perspective predominates throughout church history, whether as Augustinian Platonic dualism or Thomistic qualified dualism. Reformation thinkers typify it. John Calvin writes, “[T]hat man consists of a soul and a body ought to be beyond controversy. Now I understand by the term ‘soul’ an immortal yet created essence, which is his nobler part.... [T]he conscience... is an undoubted sign of the immortal spirit... [T]he very knowledge of God sufficiently proves that souls, which transcend the world, are immortal, for no transient energy could penetrate to the fountain of life.” (1960, I, XV, 2). The subsequent Westminster Confession of 1646 affirms that “The bodies of men, after death, return to dust, and see corruption; but their souls, which neither die nor sleep, having an immortal subsistence, immediately return to God who gave them.... At the last day, such as are found alive shall not die, but be changed: and all the dead shall be raised up, with the selfsame bodies, and none other (although with different qualities), which shall be united again to their souls forever” (32, 1 & 2). The Catechism of the Catholic Church concurs: “The soul does not die with the body, from which it is separated by death, and with which it will be reunited in the final resurrection.”

For Christians like Calvin, not only is God the source of the human essence, which embodies God’s image, but the human essence makes possible our knowledge of God. Christianity is thus integrally intertwined with anthropology. To understand humans

in their deepest being is to understand them in relation to God. “Man’s being, man’s nature, is to *stand in grace*, God’s grace.... [H]is essence is to be an object of God’s grace,... ‘to be related to God....’ [T]his essential nature of man can never be without God, and turning away from God is not a possibility for this nature: it is ‘the ontological impossibility of man’s nature’” (Berkouwer 1962, 91–92).

The rise of modern science in the post-Darwinian age has not extinguished anthropological dualism, although contemporary discussions much more carefully attend to scientific data, theories, and discussions. The noted British philosopher of religion Richard Swinburne provides one of the more philosophically refined and thorough contemporary articulations of substance dualism. Physical properties belong to the body; (pure) mental properties belong to the soul. In our current state, human mental life requires the brain and nervous system. In making possible our reasoning ability, memory, and character these physical components more intimately relate to who we are than do any of our other physical parts, which also are necessary for continued bodily survival. But although bodies are necessary to our current existence, we are not identical to them. Swinburne gives the example of a neurosurgeon transplanting each of two halves of the human brain into different bodies. In such a case, we could not tell which, if either, of the brain-implanted bodies is us. Hence, persons are not identical to their brains (or bodies) (1986, 150). Bodies are important, but their continuity provides only indirect evidence of a person’s identity. We are more than our continuing body, something that seats our consciousness. Mental properties, which as contingent could be duplicated in others, do

not differentiate individual persons; rather, their individuality is found in “thisness”, to which each person has privileged access.

Swinburne does not deny the biological evolution of human beings. Indeed, animals also have souls, though with structures different from ours (1986, 208–09). But his creationist account of souls allows Christianity more fully to enter the anthropological picture. Swinburne is dubious that evolution can explain how mental life and hence the soul arose, for science cannot explain the evolution of mental life. “As far as we can see, there is no law of nature stating that physical events of certain kinds will give rise to correlated mental events, and conversely, there is nothing in the nature of certain physical events or of mental events to give rise to connections” (1986, 198). As to the latter, science cannot provide an explanation of why particular brain events cause specific mental events, and vice versa, for it is unlikely that it can discover natural laws among or governing the phenomena” (Swinburne 1986, 195; 1979, 161). Reliable correlations, yes; natural laws, no, if for no other reason than that mental properties differ from physical properties and cannot properly be reduced to physical properties that could be correlated with them; they fall outside the scope of physics and chemistry (Swinburne 1986, 192; 1979, 161–75). Furthermore, no law of nature could determine which, of all the many possible humans who have the same properties as each other, come into existence as the result of some process (e.g., initiated by human sexual intercourse). This is because the difference between such humans (and so their souls) is not a difference of properties. Opting for personal as over against scientific explanation, he traces to God both the origin of the soul and its functioning in terms of established correlations between brain

states and mind. “Only chance or God could determine that I rather than someone else with all the same properties as myself emerged from my mother's womb” (Swinburne 2016). We must seek for a personal explanation of the establishment of the functional relationship that holds between brain states and mental events, a relationship provided through God’s creative, law-setting activity, “who, intentionally keeps the laws of nature operative ... and also brings it about that there is linked to the brain of an animal or man a soul which interacts with it in a regular and predictable way” (Swinburne 1986, 198). Swinburne adopts a creationist view of the soul’s origin, “the creation of each human soul anew by God who gives one to each embryo able to receive it” (1986, 199; see Foster 2001, 29). In Swinburne’s Christian dualism, God is involved in the origin and functioning of something that science cannot explain, or at least has been unable to explain to this point.

A traducian view of the soul can be found in William Hasker’s emergentism. Taking inspiration for his anthropology from contemporary science, Hasker holds that “the human mind is produced by the human brain and is not a ‘separate element’ added to the brain from the outside.... When elements of a certain sort are arranged in the right way, something new comes into being, something that was not there before” (2012, 481). Mental properties, not explicable in terms of brain functions, “manifest themselves when the appropriate material constituents are placed in special, highly complex relationships.... Mental properties are emergent (when) they involve emergent causal powers that are not in evidence in the absence of consciousness” (Hasker 1999, 189–90). What emerges is a substantial individual that has a unity of consciousness and exercises

causal powers. Religion plays into this scenario differently from traditional Christian substance dualism. Since matter inherently contains the potentiality of life, there is no need for God or religion to explain how souls arise. Only at the end of life does God appear to be necessary to give life after death, since the ground of mind, the brain, experiences death.

Both views—that the soul emerged at some point in the ancestral human lineage or that God implants individually it in each human—encounter the problem of the “first.” At what point did the first ensouled *human* being arise? On the creationist account, did God implant souls into Neanderthals or Denisovans, or only into homo sapiens? Did the first ensouled human wonder whether his or her parents had self-consciousness, moral consciousness, or free choice? If one takes the view that even animals have souls (Goetz and Taliaferro 2011, 201), then at what point did the first human deriving from a proto-human have the consciousness, freedom, and moral awareness that characterizes *human* souls? Did the parents of the first human have an animal soul and hence were not morally accountable, or does the ensouled lineage prior to humans include beings that are morally accountable and self-consciously aware? It might be replied that the absence of a definitive break with our ancestors is not all that significant, though this fails to accord with the significance dualists give to self-consciousness, freedom, and moral choice in determining that humans have or are souls (in a functionally unitive way).

Christian anthropological dualists also face concerns about the possibility of life after death. The question remains whether “this evolved (sic) human soul can survive on its own apart from the body which sustains it” (Swinburne 1986, 298). Without



continuity of brain or body and denying the Platonic view that the soul is naturally immortal, Swinburne considers the continuity of existence of the soul without its natural biological accompaniment. At this point he relies on the possibility that “God, being omnipotent, would have the power to give to souls life after death (and if there is no natural law which ties the functioning of a soul to the operation of a brain, God would not need to suspend natural laws in order to do this)” (1986, 309). “I have not argued that the soul continues to exist after death. I believe that we need the Christian or some other religious revelation to show this. But what I have shown is that we each have a soul as our essential part, and so that the destruction of our bodies does not entail the destruction of us. It leaves open the possibility that the soul continues to exist and will be joined again to a body” (Swinburne 2016). For Swinburne, in contrast to the traditional view, the continuance of the soul is not a given but due to an intentional act of God. Persons continue their personal existence possessing their “most central desires and beliefs.” The possible functions of this disembodied soul might be debated, but he thinks that it is reasonable to believe that at some point God will provide the soul with a body, either temporary or permanent, to enhance its functioning. The existence and activity of a personal God, not philosophy or science, guarantees that individual human existence does not end in death.

There are oft-repeated philosophical difficulties with this dualist view of the human person. One is the problem of accounting for the possibility of causal interaction between two radically diverse substances with nothing in common, one non-spatial, non-physical, and private and the other spatial, physical, and public. One response is that

often we do not know *how* things happen, only *that* they do, and soul-body causation constitutes one such instance (Goetz and Taliaferro 2011, chapter. 5). Another difficulty is accounting for the identity of the soul over time if being embodied is not essential to it. What noncontingent properties (e.g., other than individual memories, beliefs, desires, etc.) would it have to individuate it? Swinburne suggests “thisness,” but what individuates particular instances of thisness? Others suggest self-consciousness or a first-person perspective, but these presuppose a unique self or soul rather than identify its uniqueness. Others suggest that although the soul is simple, it has multiple properties (Goetz and Taliaferro 2011, 144). But these properties, delineating powers, and capacities are contingent and insufficient to account for identity over time. A third objection arises from the ability of neuroscience to identify brain locations for what appear to be mental processes. Dualists respond that this establishes only causal correlation, not causation (Goetz and Taliaferro 2011, chapter. 6). My interest is not in rehearsing or debating the critiques but in tracing dualism’s close connection to the religious concept of human beings that formed much of Western Christian thought prior to and through the twentieth century. Challenges to anthropological dualism, where God placed souls in each person and gave hope for life after death, arose with the Darwinian worldview; to this we turn.

#### Phase Two: Humans as Biological Evolutes

Traditional Christian anthropology underwent significant reassessment in the 19<sup>th</sup> century. Although anticipated by the thoughts and writings of others, Darwin’s theories expressed in *Origin of the Species* in 1859 and *Descent of Man* in 1871 established a turning point in the scientific understanding of human beings. Darwin replaced divine

teleology with a non-teleological theory of natural selection that lacked any anticipatable evolutionary direction or definite outcome. While intentional animal selective breeding imitated in part the process of natural selection, in species development no predetermined outcome was to be achieved or overall plan sustained. Natural selection had no master or divine operative breeder comparable to William Paley's inferred master designer. The process was unconscious and random, the governed biological parts strictly material, not spiritual. Applied to humans, Darwinian thought pushed us closer to simians than to angels. For Neo-Darwinians, humans are the accidental product of eons of genes and their mutations, shaped by environments through natural selection, possessing no transcendent significance.

Although many 19<sup>th</sup> century Christians accepted Darwinism, "opposition arose from the concern that common descent with the rest of the animal kingdom might reduce humanity's special role and value in creation...and subvert the moral order" (Alexander 2012, 235), and these concerns in turn had implications for the compatibility of Darwinism with Christianity. Regarding the rise of human beings, "The interlocking evidence for our origin in ordinary, endless processes explains and makes possible far more than do exalting stories of divine creation" (Moravec 1999, 75). If materialistic views of human persons are philosophically and scientifically satisfactory, God is not necessary to account for how humans originated and for their nature and conscious functioning.

What then are we to make of the Genesis account of human creation; does not Darwinian science lay the axe to the Edenic forest? The answer depends on how one

understands the Genesis narratives. One line of interpretation treats Genesis 1 and 2 as a foundationally historical and scientific account of how and when God originated the universe and its contents. This book of beginnings provides the Hebraic response to the ancient question why things exist and are as they are. Viewed as a scientific or historical account, God's special act of creating the man out of dust and the woman from the man's rib is difficult to square with a Neo-Darwinian account of human origins and lineage. However, an older tradition interprets the Genesis accounts not literally but theologically. From Philo and Origen to Augustine and Calvin the stories are treated figuratively, allegorically, or as literarily appropriate to the cultural context (Alexander 2012, 239–40). If one understands the opening Genesis narratives as functioning as theological-political documents describing how the Supreme Monarch establishes his kingdom and thereby justifies not only his claim to exclusive possession of everything in it but to their distribution and settlement, the hermeneutical focus properly changes from a scientific or historical account to theology (Reichenbach 2003). It puts readers in position to anticipate two central motifs of the Pentateuch: the promise of a specific portion of the land to Abraham and his descendants and the justification of its conquest and resettlement. Given this hermeneutic, no conflict arises with the Darwinian account of the biological origin of humans. The Genesis creation accounts function not as science or history but as theology that helps us understand how Israel viewed divine sovereignty regarding their occupation of the land.

But what about the Christian central doctrine of the *imago Dei*? Many Christians have understood the image of God ontologically, expressed in human features like

intelligence, ability to reason, and the moral decision-making faculty of the soul that emulate, in some analogical way, those of the creator. Augustine held that the *imago Dei* refers to the rational soul, and specifically to its unique Trinitarian abilities of memory, understanding, and will (love) (Augustine 1948c, 6.12; 141.6). Aquinas maintained that although the likeness is analogical in that God possesses the characteristics virtually but not formally, the intellectual or rational soul grounds the ontological likeness (1945, Q4, art.3). Similarly for Calvin, “The proper seat of his image is in the soul.... The image of God...is spiritual” (1960, I, 115.3). Others held different views on the *imago Dei*. Martin Luther, speaking of our moral status before God, saw in it the claim that humans were created holy, morally perfect (1961, 69). This is consistent with the Apostle Paul’s emphasis on the image’s moral dimension that the new self with which Christians are to clothe themselves is to be like God in righteousness and holiness (Col. 3:10; Eph. 4:24). Karl Barth interpreted the *imago Dei* relationally and interpersonally as emulating the relationship within the Trinity (1958, 184–86). A fourth view is that the *imago Dei* is functional, addressing the representative and stewardship tasks that, in the ancient cultural context, held between emperor and vassal and that hold between God and humans (Reichenbach 2003, 48–56).

The biblical data regarding the *imago Dei* are significantly ambiguous, leading to diverse interpretations (Herzfeld 2012, 504). In various ways, scripture uses but does not define the term. Further, the meanings Christians give to the term are refracted through the philosophical, theological, scientific, and cultural lenses of the interpreters. Dualists envisage the *imago Dei* in terms of the implanted soul. Contemporary existentialists

interpret the concept ethically, relationally, or functionally. This suggests that the biblical concept of the *imago Dei* is, to a significant degree, open to interpretation, depending on the presuppositional framework invoked. But although the *sine qua non* of the concept is that it connects the person to God, we need not adopt an ontological interpretation grounded in a soul. Relational and functional interpretations suffice.

What can we say about the roles of religion and science at the other end of the life spectrum if we adopt a Neo-Darwinian view of human beings? Neo-Darwinian materialists almost uniformly maintain that little room exists for persons' conscious life after their death. If mental states are identical with, the phenomena of, or supervenient on brain states, the demise of the brain should make life after death impossible. "It seems preposterous to assert that, when the brain is completely destroyed, the mind suddenly returns intact, with its emotional and intellectual capacities, including its memory, restored" (Edwards 1992, 296).

This objection is raised apart from the consideration that God might be involved in some special way in bringing about our personal life after our death. After all, from the beginning Christians believed in God's resurrection of the person. If the psychophysical person is completely destroyed, then resurrection must be understood in terms of God's re-creation of the person. Theologically it sounds simple; if God could create the world initially, it seems reasonable to maintain that an almighty, omniscient God could re-create humans physically with all the brain properties they had prior to death so that, with their minds and consciousness emerging from the physical, they are the same person who died. To accomplish this God could program their re-created brain to have neural components

and structures identical or fundamentally similar to those they had when they died (or at some time prior to their death) so that they would have substantially the same ideas, perspectives, memories, and personality traits that they had at their maximal functioning before they died. We are gap-inclusive persons: we live a life on earth, die, and then are re-created at some future time (Hick 1976, 278–96). God, as being central to religion, has a central role to play in our future ontological existence.

Some have questioned whether re-created persons would be identical with the deceased rather than mere replicas. “Attempts to conceive of a resurrection without a soul have encountered serious difficulties over the personal identity of the resurrected (or re-created) person with the individual who previously lived” (Hasker 2012, 485–86.) One might suggest several criteria that something (B) must satisfy to be the same as A and not merely a replica. For one, since B is physical it must look reasonably the same as A. However, physical similarity is not a necessary condition of identity, for although we are the same persons as when we were in utero, little physical similarity exists between us now and this early stage of our existence. [It is important to distinguish epistemological questions of identity (how we know B is identical to A) from the ontological question of identity (what makes B identical to A). The two are not unrelated, but our concern is with the latter.]

A second suggested criterion of identity is spatiotemporal continuity; one thing is identical with another when they connect spatiotemporally; possession of essential properties *connectedly* over time and space is necessary and sufficient for something's identity. Since the deceased and the re-created fail on this criterion, it is argued that the

re-creation scenario itself fails. Now it is true that we generally consider spatiotemporal continuity necessary for identity. And if we invoke this criterion, it is difficult to find material objects that fail this criterion and still are identical rather than replicas. Yet we make interesting exceptions to the spatiotemporal continuity criterion of identity. We do not require connected continuity for abstract objects such as wars, pieces of music, or even this article that, if erased on my hard drive after being copied onto another computer, would be the same article.

More relevant to our concerns, we allow exceptions to spatiotemporal continuity in special considerations of persons. Consider the way persons *as characters* function in plays. Hamlet has identity throughout the acts of Shakespeare's play *The Tragedy of Hamlet*; we experience no logical difficulty considering him *in the play* as a gap-inclusive person whose existence is punctuated by intermissions between the five acts. He appears in Act I, disappears, and then reappears in Act II. He could even have new memories, perspectives, and ideas in subsequent acts and still be Hamlet. Of course, the actor Richard Burton who plays Hamlet has spatiotemporal continuity between acts, but we clearly can distinguish between Burton and Hamlet. We could go backstage and talk to Burton between acts, but not to Hamlet. He simply does not exist between acts. Indeed, the very questions we would pose to Burton about his acting would make little sense to Hamlet. It might be objected that the content of the respective acts in the play, which may contain references to experiences off-stage, requires we assume that the character lives between acts. But one could write a play in which the characters expressly have no experiences between the acts (it would take little modification of Beckett's *Waiting for*



*Godot* to accomplish this). As persons in the context of plays have identity despite being gap-inclusive, so people in real life can be gap-inclusive (lack spatiotemporal continuity) with God's re-creating assistance.

Some formulate a third criterion of personal identity in terms of psychological criteria such as one's memories and other mental states (Locke 1995, II, 27). Others reply that psychological criteria fail to sufficiently establish identity, so that although re-created persons possess the same memories, beliefs, intentions, desires, and so forth once possessed by the deceased, they might not be the same as the deceased. Bernard Williams suggests we consider the case of Guy Fawkes (Williams 1956, 239). After Guy's execution for trying to blow up Parliament, Robert and Charles both claim to remember being Guy Fawkes and hatching the plot. That is, they both claim to have Guy's memories and possess other psychological features that are identical with Guy's. If just one person had the deceased Guy's memories, we might feel free to identify that person as Guy Fawkes, using a psychological criterion. But if two persons claim to have those memories, we cannot say that only one really is Guy and the other a replica, or even that both are replicas and not Guy. Both satisfy the psychological criterion for being Guy. But neither can we say that both are Guy, for by the principle of the identity of indiscernibles one person cannot be two numerically different people. Hence, the objection goes, God could not recreate one person, since this entails the possibility that as omnipotent God could make multiple copies of that person.

But granting that God is omnipotent, what we mean by omnipotence is that God can do what is logically possible or that the doing of which by an omnipotent being is

logically possible (Mavrodes 1963). It is logically impossible that God create two or more numerically distinct individuals to be simultaneously identical to each other [either re-create Guy (say Guy<sub>2</sub>) while Guy is still alive or create Guy<sub>2</sub> and Guy<sub>3</sub> to be identical while living simultaneously]. To do so would violate the principle of the identity of indiscernibles. But this does not prevent God from re-creating one person when the first is deceased. Williams' multiple replica criticism fails, for it violates God's omnipotence. The objector is misled by thinking that since *a* (God can create Robert to be identical to Guy) can be true and *b* (God can create Charles to be identical to Guy) can be true, both *a* and *b* can be true simultaneously. But this does not follow: although I can plant a red oak tree in my front yard and I can plant the same tree in my back yard, it does not follow that I can plant it in both simultaneously. In short, this presents no objection to divine re-creation of persons.

Lynn Baker claims that "since the universe itself and its inhabitants evolve, human persons come into being at some time. But that only means that they are emergent, that they are not reducible to subpersonal or nonpersonal items" (2011, 14). She goes on to suggest that someone is a person because the person possesses a first-person perspective. Suppose that God made 100 replicas of my body. Although these replicas have identically constituted bodies, they cannot have my first-person perspective, what makes me me. Even though others are not able to distinguish me from the replicas, I know who I am in virtue of my first-person perspective (a view that is similar to Swinburne's "thisness," except that the first-person perspective is not substantial). We don't need to appeal to a criterion to establish personal identity, for there is no criterion

for sameness of first-person perspective. We have reached a basic experience. She notes that a distinct advantage of this is that it “allows that a person’s resurrection body may be non-identical with her biological body” (Baker 2001, 160). Indeed, it may even be a spiritual body; “all that is needed is God’s free decree that Smith be constituted by (a) resurrection-body” (Baker 2011, 16). The upshot of this is that on a monistic construction of human persons, God’s re-creation of the person is possible. (Of course, that re-creation is ontologically possible does not solve the epistemic problem of how to distinguish a real re-creation from a simulacrum.)

Hence, there is no reason to dismiss religious ontological considerations as incompatible with a Neo-Darwinian view of the human person. The Genesis scenario of human arising understood as a piece of science or history might no longer have currency, but it still can tell us about God’s sovereignty, how God looks at and cares for humans, and desired human responses to God. And even on a reductionistic materialism, life after death is possible where an almighty God exists who can re-create persons who have the same first-person perspective and psychological features had by someone some time before death. No obvious logical objection makes this impossible once we consider what it is to be omnipotent.

While ontological considerations are relevant to the question of whether a Darwinian anthropology runs counter to Christianity, it also is true that nothing in the post-Darwinian account militates against human beings being religious, practicing religion, having a relationship with God, or possessing meaningful and true religious beliefs. In the case of the last, the causes of having beliefs about God or spiritual things

are irrelevant to the truth of those beliefs. Thus, the claim that an evolutionary science of humans is incompatible with Christianity reflects a certain bias but is groundless.

### Phase Three: Humans as Replicable Patterns

The biological changes that led to the development of homo sapiens have proceeded exceedingly slowly. It took hundreds of millions of years to evolve to more complexly celled organisms and finally to homo sapiens. As human development has been painstakingly slow, so has the evolution of human knowledge and understanding. Although the speed with which technology has progressed has dramatically improved, human mental development remains challenged by several features. First, the size of the brain and its container provide limits. We cannot grow a bigger cranial cavity rapidly enough to accommodate evolving a bigger brain with greater mental capacity and functionality. Second, the number of connections that the human brain can make limit it as, third, does the speed at which the brain can process information. Although the brain possesses strength in redundancy and parallel processing, it has the “excruciatingly slow speed of neural circuitry, only 200 calculations per second,” which ultimately will be outstripped by modern high-speed computers (Kurzweil 1999, 103). Fourth, this means that the amount of knowledge brains can possess and transmit limit human mental development. Finally, our physical bodies required to enable the transfer of knowledge limit us. In a Nietzschean sense, for strong artificial intelligence (AI), as Geraci notes, “[t]he world is a bad place not because it is evil, but because it is ignorant and inadequate” (2008, 148).

Strong AI advocates project the eventual (sooner rather than later) replacement of DNA-based human evolutives with human-created, silica-based computational machines that can process information, without loss, millions of times faster and more accurately than the carbon-based neurons in our brain. They look forward to “a mechanical future in which human beings will upload their minds into machines and will enjoy a virtual paradise in perfect, virtual bodies” (Geraci 2008, 140). “Ultimately, billions of nonbiological entities can be the master of all human and machine acquired knowledge” (Kurzweil 2002, 13).

This evolution of the new human will occur in various stages, depending on the speed of technological advance. First, we will implant mechanical devices directly into our brains. “The implant will generate the streams of sensory input that would otherwise come from our real senses, thus creating an all-encompassing virtual environment that responds to the behavior of our own virtual body (and those of others) in the virtual environment. This technology will enable us to have virtual reality experiences with other people—or simulated people—without requiring any equipment not already in our heads” (Kurzweil 2002, 14).

The virtual reality machines now marketed are toy harbingers of this future technological extravaganza. Subsequently, we will download all information contained within our brains to computers. Our personal reality will then accompany that downloaded information to machines that possess numerous positive features, including greatly enhanced processing speed and software immortality. Even if one machine begins to break down it can transfer its information to other computers, so that its demise will

not terminate our personal existence. We will move to new machines, being not only immortal but without loss of content, memory, emotions, or beliefs.

Strong AI argues that we must go beyond simulating and replicating brain structures to downloading structural content, accomplished by reverse engineering our brain. “We can tap the architecture, organization, and innate knowledge of the human brain in order to greatly accelerate our understanding of how to design intelligence in a machine. By probing the brain’s circuits, we can copy and imitate a proven design” (Kurzweil 1999, 120). The first step is to perform multiple MRI scans of brains, one layer at a time, to see every neuron and its connections. Eventually, the data acquired can be “assembled into a giant three-dimensional model of the brain’s wiring and neural topology.... Once the structure and topology of the neurons, the organization of the intraneuronal wiring, and the sequence of neural firing in a region have been observed, recorded, and analyzed, it becomes feasible to reverse engineer that region’s parallel algorithms. After the algorithms of a region are understood, they can be refined and extended prior to being implemented in synthetic neural equivalents” (Kurzweil 1999, 121, 124).

In a slightly different, more recent scenario, Kurzweil thinks that this can be done by scanning the brain with nanobots from inside, thereby identifying all the neurons, axons, dendrites, synapses, and other neural components (Kurzweil 2002, 36). With the information these nanobots acquire and transmit, computer systems will be able to mirror everything occurring in the biological brain and eventually become that brain.

In the age of the mind, machines will be self-taught and self-communicating. “Once a computer achieves a human level of intelligence, it will necessarily roar past it. Humans will no longer have intellectual advantages over machines” (Kurzweil 1999, 3). Machines will have values and emotions, although not necessarily the same as ours. These machines will be able to read natural language documents, distill the information, and share it with others. They will be able to access and read all the world’s writings and put their meaning into digital form that can be searched and shared in fractions of a second. The paradise of the information age will occur when the most learned, complex, rapidly-processing machines embodying our software surpass the biological. The Age of Mind will arrive.

But are these machines truly learned; is “reading” the literature of the world’s libraries the same as “understanding” the texts? Is there reason to think that these machines have moved to the stage of semantical comprehension? Simulations of consciousness are not real consciousness, just as simulation of digestion is not real digestion. “Actual human brains cause consciousness by a series of specific neurobiological processes in the brain. What the computer does is simulate these processes, constructing a symbolic model of the processes. But the computer simulation of brains processes that produce consciousness stands to real consciousness as the computer simulation of the stomach processes that produce digestion stands to real digestion” (Searle 2002, 66). Computers cannot think or be conscious, Searle argues, because they are not physiologically or biologically structured to cause mental states, only to simulate them. More than mere computation using symbols (i.e., syntax) is

needed to create semantic-processing minds. Here lies the disputable difference: Kurzweil does not think that he creates simulations; the mechanical is a “functionally equivalent recreation” of the biological brain whose operations beget the person (Kurzweil 2002, 133). Critics of AI believe that creating simulations is all that this science fiction scenario accomplishes.

For strong AI, individual bodies become less significant; the disembodied mind—“the set of memories and patterns of thinking of an individual human that sets them apart from individuals in similar circumstances” (Bamford and Danaher 2017)—that continues is what is of interest. If we need bodies, we can link minds with these bodies, even just virtually, but the particular body housing us becomes irrelevant (Kurzweil 1999, 129). (It is notably ironic that a version of body and soul (mind) dualism characteristic of the first phase of being human returns under new auspices (Moravec 1988, 119–20).)

This view of the person and life extension, where some computerized or cybernetic existence replaces the biological—what Bamford calls “personal transfer to synthetic human”—raises serious questions about personal identity: will the person whose existence is prolonged in this manner be the same person as originally existed? Moravec suggests that not only are we pattern identities that can be instantiated in a great variety of contexts, from machines to printed algorithms, but these patterns also can be replicated innumerable times. They can be modified, added to or subtracted from, even merged with patterned bits from others’ memories or mental states that may be “floating around the population at large.” Indeed, it is possible that the “concept of you” (as an



individual) will be replaced by a “communal ego,” the synthesized combination of many patterns floating at large (Moravec 1986).

Moravec replies to several objections to this scenario. First, will not the transmitted person be a new person, lacking identity with the original (Moravec 1988, 116)? Moravec agrees that his scenario of pattern transmission presents no spatiotemporal continuity, but as we observed above such continuity is unnecessary for personal identity. What matters for identity is not the stuff we are composed of but the patterns and processes occurring in that stuff, more specifically, what is referred to as mind. Second, as patterns of information, are we replicable not only once but infinitely, each being identical with the original? For Moravec, this presents no problem; as we can make multiple, identical replications of abstractions like music and data, so we can make multiple copies of the patterns that constitute ourselves, where each is identical with the original. (The principle of the identity of indiscernibles applies only to objects or substances.) Third, Moravec suggests that shortly after replication, all copies are the same person; data acquired short term are insignificant. But after an extended period, replicas become different persons because they acquire significant new patterns that differentiate them. But if we become multiple and diverse, how can we say that our personal identity has survived this transfer from physical to synthetic? Which replica do *we* go with? Moravec suggests that this question is moot, for this already happens when we become immortal through passing on our genes and culture (1986). But his reply does not provide an apt analogy, for our mental states are not present in those transmissions.

Fourth, the problem of identity becomes exacerbated when Moravec notes that other people's mental states, including memories, beliefs, perspectives, can be added from the great human and animal pool to my pattern and mine to theirs. We become amalgams of universal data. If memories play a significant part in (though do not fully constitute) our identity, *our* survival is seriously jeopardized. We would have many first-person perspectives, alternately moving from one to another. We become "transient individuals constituted from a communal pool of personality traits," possessing memories of events we never experienced, prior identities which were not us. (Moravec 1986). Finally, for Moravec, "it makes no ultimate difference whether our machines carry forward our heritage on their own, or in partnership with direct transcriptions of ourselves. Assuming long term survival either way, the end results should be indistinguishable, shaped by the universe and not by ourselves" (1986). We give ourselves up to be remade.

Supposing that strong AI's conception of the future is possibly realizable, that recreation does not violate personal identity, what has this to do with religion? First, the limited success but hopeful projections of AI have led to skepticism regarding the relevance of religion to AI's conception of future human existence. While many see no place for religion, others appear more conciliatory. The title of Kurzweil's book, *The Age of Spiritual Machines*, seems to hint that religion will play a significant role in the "new human." We will be "spiritual machines." On closer inspection, however, by "spiritual" Kurzweil means something quite different from those who use the term religiously. For him, to be spiritual is to be conscious. By it we "transcend our everyday physical

reality... Just being—experiencing, being conscious—is spiritual, and reflects the essence of spirituality” (Kurzweil 1999, 149, 153). This “new being” will have access to spiritual experiences— “a feeling of transcending one’s everyday physical and moral bounds to sense a deeper reality”— at will (Kurzweil 1999, 151). If there is a God spot—a particular locus of nerve cells in the frontal lobe that are active in religious experiences, it could be recreated in the computerized “brain” such that, when stimulated, the computational person will have religious experiences of God. With its virtual body, it can experience activities such as worship, praying, meditating, even evangelizing other spiritual machines by connecting with their “spiritual dimension.”

On this scenario, God is no longer relevant to the origins of the new being. Humans now are free to create the new humans in their own image. The *imago Dei* will be replaced with the *imago māchīnae*, or better, *imago indiciōrum*. One looks to the replicators for guidance as to what the new being will remember, think, feel, desire, and believe, for downloading and replication can now be selective, taking from the individual human brain what it wants and discarding the rest. Once downloaded, the information can be shared selectively among other machines, either actually or virtually, and enhanced.

As to the end of life, immortality will be achieved by human disposition of information segments without any reliance on God. If humans can replicate individuals programmatically in machines, the program can live forever, connected with diverse virtual or artificial bodies. Humans are now ontologically freed from God and mortality. These computers, robots, or cyborgs could believe in God, have spiritual experiences, and be virtually connected to others, but although a virtual God could be created for God

experiences, an existing God who plays a meaningful role in human existence is no longer necessary for religious behavior, encounter, or experience.

### Morality, Freedom, and the Person

Sherry Turkle writes, “An unstated question lies behind much of our current preoccupations with the future of technology. The question is not what will technology be like in the future, but rather, what will we be like, what are we becoming as we forge increasingly intimate relationships with our machines” (2002). Indeed, what will we be like if strong AI has its way with us, making intimacy complete by incorporating us as software into machines? If we are merely software, accessible by diverse computational machines or programmed into robotic bodies, have we lost our selves? It is true that we have abandoned our biological heritage, but Christians of other persuasions have not felt it necessary to preserve the biological. Christian dualists understand our fundamental selves to be non-biological, divinely implanted spiritual souls. Some Christian anthropological monists, such as Lynn Baker (2001, 160), following 1 Corinthians 15, see us as essentially embodied although not essentially biological, for we can be divinely re-created as spiritual bodies (without specifying what this means other than it is nonbiological). Consequently, it is not the departure from the biological per se that might, by itself, prove worrisome—though indeed it will if as Searle and Neo-Darwinians suggest we are intrinsically biological. Whether our origin is biological or transcriptional is irrelevant to our standing as moral agents valuable as ends in themselves; functionality not origin is key. Of a greater concern is the possible loss of our selves. Kurzweil’s reductionistic, rationalistic understanding of human beings omits much of what it is to be

human: our interaction with the environment, our ability to converse, and our ability “to navigate the world of relationships, ... express and perceive emotions, to manage one’s own emotions, and to use emotions to facilitate thought” (Herzfeld 2012, 506).

The ultimate goal of strong AI is knowledge acquisition. It desires to access all acquirable information to achieve Kurzweil’s Singularity, when in the moment of supreme consciousness machine-instantiated knowledge surpasses that of all humans. In our new existence, we become like all-knowing gods. “A living person’s value, in Apocalyptic AI, stems from the knowledge he or she possesses, rather than being intrinsic to life or grounded in social relations of one sort or another” (Geraci 2008, 147–48). But knowledge simply for its own sake is not a worthy goal; we desire knowledge directed toward action, toward meaningful involvement in our environment and in relationships with others. Not just any action, but from the religious perspective, action stemming from morally significant choice invoking our self-awareness, freedom, ability to make moral decisions, and obedience to God. To what extent, we might ask, will these be affected by our being uploaded into synthetic embodiment?

If we are merely software programs, wherein will our freedom to choose and act lie? If we are the mere products of electrical discharges between silicon or biological chips, can we *choose* to do otherwise? Any “choice” made by us arises from our computational settings. Just as worrisome will be the loss of our freedom to *act*, for as software we will not necessarily have access to anything that will implement our decisions. Our connections to implementing hardware will rely on other beings supplying us with information and tasked with executing our choices, either in facilitating our

acting or in granting us access to machines that can realize our desires. In our software state, we become restrictedly reliant upon others, whether masters, minders, or makers. The makers might be programmers and censors who select and channel our inputs, desires, and choices to serve their own purposes. In utopian settings we allegedly have nothing to fear. But alas, utopias turn eventually and often quickly into dystopias. Freedom of choice and action becomes a noteworthy casualty of human “progress” to the computational.

This loss of freedom leads to worries concerning moral decision making. Moral agency involves more than having functioning algorithms to select between diverse if-then statements that calculate to the best probable outcome based on generalized experience with past events. In addition to this utilitarian ethical function, moral agency presupposes self-conscious understanding of the role and position of the agent in the environment and use of deontic principles that themselves may be in conflict and need to be prioritized and contextualized. Both understanding and self-consciousness are problematic for both Darwinism and strong AI. Morality involves not mere assessment of consequences, but also intentionality, motivation, and reflection on the rules or duties that affect or govern our existence. These are distinctively mental properties that physicalists generally reject or else explain as mere physical phenomena. Those who hold to epiphenomenalism contend that mental properties are given off by or produced by physical properties and possess no causal powers of their own. We think and act when physical neural impulses motivate our physiological features; mental events per se make

no difference to the physical world. Intentionality and motivation provide no independent, causal account of behavior.

The major argument against the causal efficacy of the mental is formulated in terms of the principle of physical closure. According to this principle, every physical event has a sufficient physical cause, such that physical events are caused solely by physical events. “A state that is causally sufficient for some effect excludes any mental state that supervenes on it from being causally efficacious with respect to the effect” (Menzies 2013, 60).

This epiphenomenalist view encounters several difficulties. First, in denying causal activity to the mental, epiphenomenalism runs counter to our phenomenal experience where our mental events, like perceptions, pains, thoughts, beliefs, and intentions, affect our behavior. I take pain relief medicine because I *feel* pain. I drive to church on Wednesday evening I *believe* the choir is practicing. I *desire* a burrito and so walk at noon to a nearby Mexican restaurant.

Second, good philosophical reason exists to think that the mental makes a real difference. Specifically, a real difference holds between a choice that results from mere physical causes and a choice that results from rational deliberation, that is, a choice that we make for good reasons. Only the second allows us to assess the *rational* value of our choices. We not only want to make choices, we desire to make good choices, where good is considered as both successful and moral. To do this requires that we deliberate carefully about the options, and if our deliberation is rational, we decide based on sound and cogent argumentation using what we take to be the best evidence. But if our mental

processes are caused, determined, or realized by arational neural events, we can account causally for our choosing, but not for our drawing *rational* conclusions, deliberating *rationally*, or choosing based upon the strength of the support we find in the evidence. The physical, electro-chemical transferences in the brain are entirely arational, governed by deterministic or probabilistic physical laws about energy transfer. But when we speak about assessing the evidence and engaging in sound, cogent, moral reasoning, we introduce values and norms. Epiphenomenalism faces seemingly insuperable odds in attempting to explain the rationality of human mental life (Reichenbach 2016, 62–65; Hasker 1999, 64).

Defenders of AI reply that this abstract, mental-map approach to understanding and consciousness can be overcome through concrete exemplifications. Understanding is the successful behavioral manipulation of concrete objects. We say that children understand a mathematical equation ( $1 + 1 = 2$ ) not when they can discuss it abstractly, but when they can take one object, meld it with another, and treat the two conjointly or perhaps count them. If robotic machines can be complexly programmed to respond appropriately to diverse environmental clues repeatedly over time, do we not have grounds to say that they understood the situation? To understand, must they have a mental map of the situation they face? One might reply that understanding differs from mere behavioral response; even a robot can smile on cue without getting the joke. It is not clear that materialistic machines and software can move from the appropriate response to mentally recognizing and assessing the situation.



Similar things might be said about self-consciousness or a first-person perspective. Some suggest that “perhaps the important properties of consciousness are best understood functionally, too. Even if computers will not be conscious in exactly the same way as humans, perhaps they can be designed to function as if they have the relevant similar capacities.... Just as a computer system can represent emotions without having emotions, computer systems may be capable of functioning as if they understand the meaning of symbols without actually having what one would consider to be human understanding” (Wallach and Allen 2009, 68–69). But when we talk about reincarnating humans into machines, the “as if” will not suffice. If the actual first-person perspective is lost, so is the self, and the machine is only “as if” me. To be moral agents in this computational incarnation, we must be more than mere responders to the environment but able to engage intentionally and to provide moral justification of our actions, to be able to contend reasonably that particular actions are morally right and others morally wrong. This the arational cannot do; we must look elsewhere for the normative.

To forsake our freedom to choose and act, to hand these over to censors, minders, and implementers, to lose the rational, to abandon intentionality and moral conceptualization, to replace experience of a real God with any number of virtual realities hardly seems like an advancement in morality, religion, understanding, and, ultimately, in what it is to be fully human. In strong AI, even the functional understanding of the *imago Dei* has disappeared in the human drive to create from purely human resources our own omniscience and immortality. We are left to wonder what values and virtues will guide

science and technology and their craftsmen in this final proposed remaking of humanity

(Lewis 1946; Reichenbach 1982).

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