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14 The science of evil and the evil of science

Ted Peters

Evil is something we can understand but cannot explain. To explain something is to render it understandable in terms other than itself. Despite the fact that we can understand evil, we cannot rationally explain evil in terms of anything other than itself. Evil is so basic, it is primal.

We cannot rationally explain everything we intuitively understand. We understand much more than we can explain. Every attempt to explain evil falls short somehow. An explanation gets at part of it; yet, at a deeper level, we understand that the explanation is less than adequate. The ocean of human experience is vast and deep, and reason at best paddles in a modestly sized canoe.

Both science and theology are attempts to explain. Both are rational. Both are respected. Yet, no matter how persuasive these rational explanations may be, a gnawing voice whispers within the conscientious among us, "that's not quite it." Explanations can provide partial illumination, to be sure; but when it comes to evil they cannot provide an exhaustive explanation. Like trying to build a screened cage around a hornets' nest, some bugs will inevitably get out and sting us from behind.

In what follows, we will look at two attempts to provide a science of evil: Ernest Becker's "Science of Man" and the sociobiological interpretation of evolution. Each is an attempt to confine to a rational box a hurricane complex of destructive forces that blow such boxes away. After looking at these two attempts to construct a science of evil, we will turn to the theodicy problem as posed by theologians. In this discussion, we will find a parallel: theological reason is no more comprehensive than scientific reason when it comes to the question of evil. The theologian can provide some illumination, but many dark and inexplicable corners remain. Evil involves a dimension of impenetrable mystery. To understand evil is to understand this mysterious – this irrational – dimension.

A critic such as process theologian David Ray Griffin might complain about what I am saying here. Griffin will not allow a theologian to earn an honest living without rationally explicating the problem of evil. To abandon the task on the grounds that it is too mysterious would amount to a denial of the very craft of theology. To say that "human logic does not apply . . . is to deny their own enterprise, which as 'theology' is the application of logical reasoning to the idea of *theos*" (Griffin, 220, emphasis in original). I respond: Griffin's insightful criticism does not apply in this

case. My resistance to a buttoned up rational account of evil does not come from a lazy rationality that appeals to mystery as an excuse. Rather, it comes from a trait or characteristic of evil that in itself resists rational explanation. Whether approaching evil from a scientific or a theological perspective, at some level the rationalist can only point to evil rather than provide an exhaustive explanation. The most rational thing a scholar can do with this subject matter is to point to the limit that reason can carry us. The problem, as I see it, is not that intellectually lazy scholars avoid reasoning about evil by consigning it to mystery. Rather, more often than not, the problem is that they try to explain evil as a logical question; and they end up explaining something a great deal less than the actual evil we experience.

Philosophical theologian Jerome Gellman recognizes that "the problem of evil is first and foremost grounded in a type of experience that provides defeasible grounds for believing in the non-existence of God" (Gellman, 210). The primary experience provides "defeasible grounds" for a certain disbelief, writes Gellman. According to Phil Dowe, this means the experience of evil is

open to revision. No scientific theory can be regarded as the final word, no matter how well confirmed and established it is today. . . . To some extent the same must be said in the religious area, if there is to be any continuity between the scientific and religious domains.

(Dowe, 193)

My concern here will be less on the grounds for arguing for or against the existence of God and more on the defeasibility of the very open and enigmatic experience we have with evil.

Evil is something we have to live with, and die with. Intuitively, we understand this, even if both science and theology partially deny this when attempting to provide an exhaustive explanation. Our only hope is that God understands, and that God has a plan for a future without evil.

What is evil?

What is evil? When philosophers and theologians define it, we can see that they do not like it. According to process philosopher Alfred North Whitehead, "evil is the brute motive force of fragmentary purpose, disregarding the eternal vision" (Whitehead, 239). Theologian Keith Ward holds, "evil is whatever frustrates or opposes goodness, and goodness is what is, or ought to be, desired by conscious rational agents" (Ward, 274). New Testament historian N.T. Wright writes, "evil is the force of anti-creation, anti-life, the force which opposes and seeks to deface and destroy God's good world of space, time and matter, and above all God's image-bearing human creatures" (N.T. Wright, 55). Finally, hermeneutical philosopher Paul Ricoeur reminds us that "evil is simply what should not but does exist, hence what must be combated" (Ricoeur, 2005, 2904).

Here is a description of evil that works for me: "our word *evil* can refer to sin's effects and to the suffering caused by the accidental course of nature, including disease, drought, earthquakes, tornadoes, and floods" (Peters, 9). It is also helpful to appropriate the insight of Saint Augustine that evil is the force of non-being, the power to destroy what is. Evil does not have being in itself; rather, it seeks to dissolve or destroy what is (Peters, 10; Augustine, 15). We can experience evil broadly as profanity, contamination, or defilement. "Defilement is not a stain, but like a stain; it is a symbolic stain" (Ricoeur, 1967, 36). Or, we can experience evil narrowly as sin, as the choice to act violently and cause some sentient creature to suffer. The latter, sin, is almost always accompanied by a lie, by a self-deluding rationalization that this violence is being perpetrated in the name of what is good or right or true. All of this is a description of evil. It is not yet an explanation. For explanations we turn to scientists and to theologians.

The explanatory task of both the scientist and the theologian will be difficult, however. Because evil tends to destroy order, scientific or theological attempts to account for order fail in their analysis of evil. Because sin within the larger category of evil involves a lie, it is difficult for any reasoning process to get at the truth.

Even with this caveat, there are those among us who attempt to construct a science of evil. The effort to create a science of evil runs into at least two difficulties. First, and most commonly, the scientist may underestimate the ferocity of evil's irrationality and power to destroy. Because a science of evil seeks to predict and even control evil, the scientist may be tempted to define evil in such a way as to render it easier to control. The very formulation of his or her definition of evil may be too shallow or too simple, thereby trying to subject to control something less than evil full strength. This is like trying to measure wind direction with a weather vane during a tornado that destroys the entire neighborhood, weather vane included.

A second difficulty could be even worse. In the attempt to get close enough to evil to explain it, the scientist may get caught up in evil and press his or her science into the service of violence and chaos. This would be a move from a science of evil to the evil of science. After an attempt to become commander of the force, the scientist becomes a foot soldier marching in the army of destruction.

Ernest Becker's "Science of Man"

Ernest Becker tried twice to construct a science of evil, what he called a "Science of Man." Like a scientist, he proffered a hypothesis and then sought to rally evidence to confirm or disconfirm it. His first hypothesis was that evil is uniquely human, and that violence is spawned when individuals react against the evil oppression of impersonal institutions. Eventually he discovered that evil is much more ferocious and powerful than he had originally estimated, so he changed his hypothesis. The new hypothesis became: evil is the result of our human tendency to deny our own mortality.

Becker grew up in a Jewish family in Massachusetts and was sent to the European theater during World War Two. When he helped liberate a Nazi concentration camp, he saw firsthand the scope of human atrocity. He later earned a

doctorate in anthropology and pursued a university career. He won the Pulitzer Prize for his book, *The Denial of Death*.

The first of Becker's two hypotheses was developed in his 1968 publication, *The Structure of Evil*. He placed his analysis of evil within the framework of Western Enlightenment humanism, according to which the highest value is attached to human freedom. That which inhibits or prevents freedom is evil. Impersonal and oppressive social structures are evil, and the human race is struggling to liberate itself from its depersonalizing chains. To achieve this liberation, we need to bring class rivalry and economic forces under rational control:

When modern man sets in motion vast social institutions but does not take critical control of them, the institutions assume their own momentum; the people who man the institutions become like ants mechanically doing their duty, and no one dares to question the routine to which the institutions conform. . . . Responsibility is nowhere; grinding power everywhere.

(Becker, 1968, 142)

Evil is here understood as grinding power that prevents freedom from coming to expression.

Becker makes no appeal to God here. This is humanism. So, he replaces *theodicy* with *anthropodicy*. He does not try to justify God in the face of evil, as a theologian might. Rather, he places both the phenomenon of evil and its rational analysis within the human domain. His proposed "anthropodicy is not a theodicy: it would limit itself to the use of human powers effecting whatever they can to overcome avoidable evil" (Becker, 1968, 376). The aim of Becker's "Science of Man" is control: to enable us to "overcome avoidable evil."

"Flower Power" in the 1960s provided the cultural context within which Becker's science of evil entered the intellectual marketplace. A dominant theme of the era was the oppression of mass society. Individualism seemed threatened. The spirit of freedom and identity fought back with political acts of nonconformity. In 1969, Georgetown University government specialist Victor Ferkiss could write, "mass society was evil for two reasons: it threatened man's freedom and his identity" (Ferkiss, 71). Evil took the form of the mass repressing our innate goodness, our thirst for free self-expression. Protest became the preferred form for freedom's rebellion. This was the mindset Becker shared with the wider society of his era.

However, the weakness in Becker's anthropodicy is that he defined evil in such a minimalist way that evil appeared to be subject to rational control. Assuming an innate goodness to human nature, Becker thought that by simply liberating human nature that evil structures would wither away like leaves in October. But evil is much more irrational and powerful and fierce than this theory accounts for. Evil arises from within human nature, not just in the forces that repress human nature. Later, in *Escape from Evil*, Becker admitted that he had underestimated how "truly vicious human behavior" is (Becker, 1975, xvii).

Becker realized the weakness in his first hypothesis, so he sought for evil's source at a deeper level, this time *within* human nature. After digging and digging, he thought he found it: evil rises up from human death-consciousness. Each of us will die; but we want to deny this indubitable fact. In our denial we lie to ourselves. In this self-deceit, we operate with the delusion that we can postpone our death if we steal the power of life from other living creatures, especially from other living human beings. The denial of death explains graft, theft, ritual sacrifice, war, and genocide.

Becker summarizes his theory:

From the beginning men have served the appetites of one another in the most varying ways, but these were always reducible to a single theme: the need for fuel for one's own aggrandizement and immunity. Men use one another to assure their personal victory over death. . . . Through the death of the other, one buys oneself free from the penalty of dying, of being killed. No wonder men are addicted to war.

(Becker, 1975, 108)

Because we are anxious about our own impending death, we lie to ourselves that we can beat death by robbing others of their life force. The result is violence, evil, and suffering.

One of Becker's insights is particularly illuminative here; namely, that when we strive to overcome evil, we actually perpetuate evil. The fight against evil only places more fuel on evil's fire. Why? Because those who organize into political ideologies or righteous armies and march against an alleged evil enemy risk committing massive injustice and destruction. An ideology such as Nazism fought to rid the world of communism; and this wrought a gigantic war. We can find the Nazi example approached on a smaller scale when a self-righteous religious or public advocacy group stirs turmoil, or when insurgents replace a former tyrant with a tyranny of their own. An ideology gives the false impression that its adherents will live on beyond death in the cause to which they gave their lives.

Each person nourishes his immortality in the ideology of self-perpetuation to which he gives his allegiance; this gives his life the only abiding significance it can have. No wonder men go into rage over the fine points of belief: if your adversary wins the argument about truth, *you die*. Your immortality system has been shown to be fallible, your life becomes fallible. History, then can be understood as the succession of ideologies that console for death.

(Becker, 1975, 64, italics in original)

To put it another way, rigid religious and political groups hide their anxiety about death behind commitment to an immortal doctrine that justifies the defeat of opponents to this doctrine. Much of the violence we perpetrate is done in the name of what is just, true, and transcendent.

By relocating the root of evil from alienating social structures to the fundamental human anxiety over death, Becker's science of evil comes quite close to affirming what Christian theologians traditionally called *original sin*. Before sin becomes an action, the human race finds itself born into a situation that prepares us for rage and acting on rage. We live in a condition of alienation: we are slated for death while we rebel against death. Self-delusion, cruelty, and violence are the side effects of original sin.

Anxiety prompted by our death-awareness becomes the foundation for explaining human violence by theologians who sought with difficulty to learn the lessons taught by World War One and World War Two. "Anxiety is the self-awareness of the finite self as finite," wrote Paul Tillich (Tillich, 1:192). Our finitude leads to an awareness of our limits, to the threat of death and non-being. Our daily existence is threatened constantly by non-being; and anxiety over non-being leads the human person and human society to construct the delusion of immortality to be gained by stealing the life force from other living creatures. In the sub-rational logic of the killer, the power to kill translates into the delusion that the killer somehow beats death. This twisted reasoning leads to violence, murder, and war—that is, to sin and the suffering of sin's victims. "Anxiety tempts the self to sin," adds Reinhold Niebuhr; "the sin increases the insecurity which it was intended to alleviate until some escape from the whole tension of life is sought" (Niebuhr, 1:235). I find the science of Becker and the theology of Tillich and Niebuhr very illuminating. We understand the human condition much better because of their work, even if some enigmas regarding evil remain.

Even though Becker's second hypothesis is more realistic than the first and finds theological consonance, both are minimalist. This leads to two inadequacies: (1) Becker limits the scope of evil to the human realm under the naïve assumption that we human beings can gain control over ourselves, thereby ignoring the fact that the inability of the human to gain self-control is part of evil itself; and (2) his limiting of evil to the human domain ignores the fact that we human beings are inextricably embedded in the wider realm of nature. Evil overlaps the human and the natural. The laws of physics and the laws of biology never go on a holiday in the life of human beings. If anything, we are natural. So, we must ask: is evil something we share with our biology? Or, more dramatically, does evil have a biological origin?

These questions have led theologians to distinguish between moral evil at the human level and natural evil in our wider context. "Moral evil is evil that we human beings originate: cruel, unjust, vicious, and perverse thoughts and deeds," writes John Hick. "Natural evil is the evil that originates independently of human actions: in disease, bacilli, earthquakes, storms, droughts, tornadoes, etc." (Hick, 12). These two domains of evil are nested within the fundamental condition within which we find ourselves, namely, metaphysical evil. According to Hick, "metaphysical evil" refers to "the basic fact of finitude and limitation within the created universe" (Hick, 23). When Becker claims we rail against our mortality, he is indirectly saying that human moral evil is our response to a prior metaphysical evil. Any adequate explication of evil would require attention to evil at the moral, natural, and metaphysical levels.

Actually, the metaphysical level can best be illustrated at the physical level. We human beings are embedded in physical nature, and physical nature is best understood by invoking the theory of biological evolution. Might evolutionary biology provide the basis for a science of evil?

From genes to geno-cide in sociobiology

This brings us to our second example of a science of evil, namely, evolutionary theory. Can we explain evil in light of biological evolution?

The Darwinian tradition in evolutionary biology has provided a platform on which scientific carpenters have been constructing explanations for many things, human evil included. Because, according to evolutionary theory, humans are thoroughly natural, it follows that this treatment of moral evil is simultaneously a treatment of natural evil. Human violence is rooted in our evolutionary history; and human ethics is similarly rooted in our biological substrate.

In Darwin's own century, the nineteenth, Darwin himself attempted to provide an evolutionary account of human culture and human morality. So did his colleagues such as Herbert Spencer, Francis Galton, and Thomas Huxley. Spencer and Galton formulated their ethical programs in continuity with nature – that is, because we have inherited survival-of-the-fittest from the natural world, we human beings should value fitness and strive to enhance human fitness. The strong should decimate the weak. Evolution-based ethics consists of breeding only the strong and intelligent – only the most fit – among us and letting the poor and infirm – the unfit – die by the wayside. Once the fit have survived and the unfit have gone extinct, then society can embrace an altruistic or cooperative ethic among the surviving fittest.

Huxley's proposed ethic, in contrast to Galton and Spencer, stands in discontinuity with our biological precedents. The strong should show care for the weak, argued Huxley. He sought an evolutionary ethic in which the human race would rise up and above its bestial past and create a society of equal justice and care for the poor. Here we have two opposite ethical stances, both based on one appeal to one science. These contrasting positions are being repeated today in debates surrounding the purported science called *sociobiology*.

The central thesis of sociobiology (along with that of evolutionary psychology and other derivatives) is this: genetic replication is the force that directs and drives evolutionary history and generates human culture, including ethics and religion. Survival-of-the-fittest is now applied to DNA sequences, not to species. This core thesis is sometimes called the "selfish gene" or the "inclusive fitness" theory. The concept of the selfish gene lies at the center of this theory. Sociobiology relies upon a version of genetic determinism: on the unstoppable drive of DNA sequences to replicate themselves. In addition, sociobiologists acknowledge a level of gene-environment interaction. Now to our question: how might the selfish gene theory explain evil?

Perhaps the worst of human evils we can think of would be war or genocide, or a combination. Sociobiology is positioned to provide us with a science of

genocide, because killing competitive genes is what selfish genes do in the struggle for survival. Following World War Two in 1948, the United Nations General Assembly adopted the *Convention on the Prevention and Punishment of the Crime of Genocide*. Article 2 of the convention defined genocide as an act or acts "committed with intent to destroy, in whole or in part, a national, ethnic, racial, or religious group." The historical genocides we know about include cruelty right along with a plan to eliminate an entire group of human beings defined as outsiders, at least outsiders to the group of killers. Within the framework of sociobiological theory, the action of the selfish genes provides the explanation for genocide.

Perhaps we can date the birth of the selfish gene theory with the work of William Hamilton in 1964. Hamilton produced a genetic based formula ($rB > C$), called *Hamilton's Rule*, to calculate moral behavior. Sacrificial action on behalf of another's welfare counts as positive; whereas ignoring or actively destroying someone else counts as negative. Hamilton could calculate a sacrificial action by counting the cost (C) to the actor. The cost would be less than the benefit (B) to the recipient, times the degree of genetic relatedness (r) (Hamilton). The premise is that individuals who share a large number of genes with other individuals are more likely to behave altruistically or caringly toward them. Individuals who share few or no genes with someone else will behave selfishly, non-altruistically. This formula purports to explain why parents who share half their genes with each child will be motivated to care for their children, to fight for their children, even defend their children by killing outsiders with whom they share no genes.¹ The degree of altruistic loyalty drops proportionality as we move away from the conjugal family into the realm of cousins, second cousins, and in-laws. If the individuals are unrelated ($r=0$), then this theory predicts that no altruism should occur. Competition and perhaps even violence should occur.

A decade later, scholars such as Richard Dawkins at Oxford and Edward O. Wilson at Harvard translated Hamilton's Rule into the concept of the selfish gene and provided explanations for human morality based upon it. The point is that, allegedly, the further the genetic distance, the less likely acts of sacrificial altruism will occur. For those whose genetic code is very distant and who are seen as DNA competitors, war and murder and even genocide become the order of the day. When one national, ethnic, racial, or religious group attempts to murder and eliminate an entire competitor group, we can now explain this according to sociobiological principles: it is simply the way that the fittest genes survive. Human genocides can now be understood as natural, as obeying the bidding of our genes.

One mildly complicating component is the distinction between kin altruism and reciprocal altruism. Hamilton's Rule incorporates *kin altruism*, wherein one individual will sacrifice his or her wellbeing for kinfolk in the confidence that the shared genomes of the clan will live on into the next generation. The term *reciprocal altruism* was coined by Robert Trivers in 1971 to show how separate species might cooperate with one another in a larger group to further the reproductive success of each species within the group (Trivers). The two work in partnership. Kin altruism and reciprocal altruism combine to support a larger group fitness, with this larger group now in competition with other inclusive groups. To say it another

way, outside the kin group where genes are not shared, one species might cooperate with another for the genetic survival of both species in pursuit of inclusive fitness. The genes of all species within an inclusive group persist through reproduction; and reproductive fitness is what evolutionary theorists mean by *fitness*.

Harvard's ant expert, Edward O. Wilson, has recently drawn a fuller picture of the selfish gene theory in light of inclusive fitness. He supports the concept of group selection, which means that evolutionary forces select eusocial groups of species characterized by internal reciprocal altruism rather than strictly single species fitness with victorious genomes. Internally altruistic societies have greater survivability than others. This leads entomologist Wilson to assert:

Group selection shapes instincts that tend to make individuals altruistic toward one another (but not toward members of other groups). Individual selection is responsible for much of what we call sin, while group selection is responsible for the greater part of virtue. Together they have created the conflict between the poorer and the better angels of our nature.

(Wilson, 2012, 241)

Natural selection now directly determines which groups survive, and only indirectly which genomes survive. My question for Wilson is this: how do you explain the evolutionary grounding for in-group loyalty and out-group antipathy, because now the in-group is genetically diverse? The Hamilton Rule seems to have been muted and supplanted – not complemented – by group selection.

Despite the tacit setting aside of the Hamilton Rule on behalf of group selection, sociobiologists and evolutionary psychologists still rely upon the concepts of the selfish gene, kin altruism, and reciprocal altruism. In both kin and reciprocal altruism, the net effect is the perpetuation of favored genomes into subsequent generations. In both forms of altruism, the participating genome triumphs because of its reproductive success. Both types of altruism serve the dominating control of the selfish gene.

An evolutionary science of evil?

The selfish gene theory appears to provide a scientific account for human violence toward outsiders and for human altruism within the family, clan, and tribe (Bennett). According to the selfish gene theory, the driving force of evolutionary history is the driving force of DNA which wants to replicate itself. The incessant and aggressive advance of intact DNA sequences provides the explanatory principle for the history of life on our planet, for the behavior of all organisms, and for human culture, ethics, and religion. It is the DNA sequence (or gene, in the loose sense of the word) which employs reproduction for the purposes of its own perpetuation into future individuals and gaining protection through the establishment of new species that will carry on this particular genetic code. The adjective "selfish" applied to "gene" indicates the hegemony over biological development exercised by DNA self-replication.

It is worth getting precise here. Exactly "what is a selfish gene?" asks Dawkins. "It is not just one single physical bit of DNA. . . . it is *all replicas* of a particular bit of DNA" (Dawkins, 88). Any DNA sequence, with any number of genes, can be engaged in DNA replication. This is the core principle of sociobiology. What a specific gene does for our body is not relevant. What is relevant is that each and every gene or DNA sequence drives toward replication from generation to generation. I wish to insert a caution: sociobiology should not be confused with the field of molecular biology, where individual gene expression gets tested for. Instead, sociobiologists proffer a theory that posits brute replication of each DNA sequence, regardless of what the genes in that sequence code for. Evil is not the product of a given gene's expression; rather, it is the product of every gene's dedication to its own immortality.

Attributing agency to DNA reverses our accustomed way of looking at the relationship between genes and organisms. The organism is DNA's way of making more DNA. One might think that an egg is a chicken's way of making more chickens. But, the reverse is the case. A chicken is an egg's way of making more eggs. Organisms and populations of organisms are transport vehicles for DNA sequences to attain their own immortality through replication. "We, and all other animals, are machines created by our genes," writes Dawkins (Dawkins, 2). Our bodies and our children's bodies are merely highways for our genes to speed toward their own immortality.

Like human beings in Becker's scheme, genes in sociobiology's scheme seek immortality. DNA sequences compete with one another for immortality. "Genes are immortals, or rather, they are defined as genetic entities that come close to deserving the title" (Dawkins, 34). The concept of "survival-of-the-fittest" coming from Herbert Spencer and Charles Darwin is now applied to the fittest DNA sequence, not to the organisms or species that survive longer. Reproductive fitness now refers to the achievement of a particular genetic code to produce organisms that reach reproductive age, produce babies, and thereby perpetuate their genetic code into immortality. If organisms compete with one another, and if one population decimates a competitor, then the genes of the victor live on. The winning genes will have defined their title as the more reproductively fit.

The daughter field of evolutionary psychology adds two factors not directly inherited from the parent field of sociobiology; namely, the role played by the human brain combined with an emphasis on decisive events in the history of natural selection. The crossing of the watershed into intelligence means that the thought processes of the brain contribute indirectly to reproductive fitness. Because we think, selfish genes with brains become more successful at survival than those without. The evolution of the human brain constitutes a decisive event in the evolution of *Homo sapiens*. Such a decisive event is referred to as the Environment of Evolutionary Adaptedness (EEA).

According to evolutionary psychologists, today's human behavior patterns are the result of a natural selection process during an earlier period when those

behaviors would have given our distant ancestors a survival advantage. The key assumptions of the field, according to Jerome Barkow, Leda Cosmides and John Tooby, authors of *The Adapted Mind*, include:

[T]here is a universal human nature, but . . . this universality exists primarily at the level of evolved psychological mechanisms, not of expressed cultural behaviors . . . cultural variability is not a challenge to claims of universality . . . the human mind is adapted to the way of the Pleistocene hunter-gatherers, and not necessarily to our modern circumstances.

(Barkow, 5)

Because our physical brains – and hence, our minds – were formed during the decisive Pleistocene EEA thousands of years ago during a much more primitive time in which human beings were adapting to a quite different environment, we understand why we see maladaptations to our modern industrialized society. Our modern skulls house a Stone Age mind. Genes are still firmly in the driver's seat, to be sure. Even though we feel maladapted to the modern world, our human brain still functions as a complex vehicle for helping to ensure reproductive fitness and the immortality of our genes.

Evolutionary psychologists titillate us by saying that we human beings are adapted to Stone Age living, but not to modern living. This tenet would add nothing to the science of evil, even if it were proven to be true. Rather, it suggests a path that ethics should follow. What seems to be presumed by both sociobiologists and evolutionary psychologists is that evolution spawns in us an ethical ideal: that which contributes to reproductive fitness is good, and that which inhibits reproductive success is evil. Our moral values are silently dictated by the genes who are using us for their self-perpetuation. The human ethics we have come to know are already derived from this natural process, and cultural reformulations of moral values should extend what evolution has already begun.

Sociobiology and evolutionary psychology fit within the tradition century and a half long of drawing human ethics out of the science of evolution. "Evolutionary ethics rests on the idea that ethics expresses a natural moral sense that has been shaped by evolutionary history. It is a scientific understanding of ethics as founded on human biological nature" (Arnhart, 715). To some degree, the science of evil emerging from this discussion is simply a component lodged within the larger agenda of producing an evolutionary ethic, of guiding human society according to what has been learned through the theory of evolution.

Now, I ask: does this moral blessing awarded to reproductive fitness illuminate our experience with evil? In part, is the best I can say. What is present on the penumbra of the illuminating focus is the dark fury of predation, violence, suffering, death, and extinction – all in the plant and animal world even before we get to the human condition. The natural realm of the struggle for existence comes to us as a threat, not as a source for what we deem to be good.

The human as killer ape

What we observe about human violence cries out for an explanation much more robust than the selfish gene theory can deliver. What we observe is that human violence is so very pervasive, wreaking abuse and suffering within families with close genetic ties as well as declaring wars against outsiders.

When we look at the archaeological record, we see that human beings have been engaged in violent – if not genocidal – behavior for as far back as evidence provides. Harvard's Steven Pinker observes:

[B]uried in the ground and hidden in caves lie silent witnesses to a bloody prehistory stretching back hundreds of thousands of years. They include skeletons with scalping marks, ax-shaped dents, and arrowheads embedded in them; weapons like tomahawks and maces that are useless for hunting but specialized for homicide; fortification defenses such as palisades of sharpened sticks; and paintings from several continents showing men firing arrows, spears, or boomerangs at one another and being felled by these weapons.

(Pinker, 306)

This suggests that our human propensity for violence is rooted in our evolutionary pre-history.

Because we humans are embedded in nature, we may wish to ask about our relationship to partner species. It is becoming increasingly recognized and accepted that we human beings share common descent with primates such as gorillas, orangutans, bonobos, and chimpanzees. With chimpanzees, molecular biologists tell us we share 98.5% of our genetic material. With only a 1.5% difference, this makes chimps an obvious species for us to study if we want to make educated guesses about our own evolutionary past. What we find in chimpanzee culture shockingly parallels what we find in our own. Especially relevant is that the male gender engages in rape and bands together in groups to commit murder.

Males are killers. This seems to be the case among both primates and human beings. Richard Wrangham and Dale Peterson see a continuity in "demonic males" between today's men and our closest cousins, the primates:

"We cloaked our own species' violence in culture and reason, two distinctly human attributes, and wondered what kind of original sin condemned us to this strange habit. And suddenly we found this event in the ape world. . . . Did it imply that human killing is rooted in prehuman history?"

(Wrangham, 6–7)

The answer seems to be affirmative. "Primate communities organized around male interests naturally tend to follow male strategies and, thanks to sexual selection, tend to seek power with an almost unbounded enthusiasm. In a nutshell: Patriotism breeds aggression" (Wrangham, 233). Chimpanzees provide a mirror in which we can see human nature at an earlier evolutionary stage. "Party-gangs

and bonded males – suffice to account for natural selection's ugly legacy, the tendency to look for killing opportunities when hostile neighbors meet" (Wrangham, 168). This is our heritage:

If we start with ancestors like chimpanzees and end up with modern humans building walls and fighting platforms, the 5 million-year-long trail to our modern selves was lined, along its full stretch, by a male aggression that structured our ancestors' social lives and technology and minds.

(Wrangham, 172)

What we learn from turning to evolutionary theory is that human behavior looks a lot like what theologians call *sin*, original sin, or at least the inherited propensity for violence.

This brings us to the brink of genocide. As Jared Diamond concludes:

[O]f all our human hallmarks . . . the one that has been derived most straightforwardly from animal precursors is genocide. Common chimps already carried out planned killings, extermination of neighboring bands, wars of territorial conquest, and abduction of young nubile females. If chimps were given spears and some instruction in their use, their killings would undoubtedly begin to approach ours in efficiency.

(Diamond, 294)

What Diamond provides here is an analogy between chimp and human behavior. There is no causative relationship. Yet, if we surmise that both chimps and humans share a common ancestor, then it is reasonable to consider the following: we have inherited an inborn propensity for genocide. No wonder that genocides occur, and continue to occur.

The larger context for this appraisal of the human condition is biological evolution according to the Darwinian model. Violence and suffering and death are everywhere, even if the engine of evolutionary advance is found in reproduction rather than extinction. This is what is natural. This is what is, so to speak. "The Darwinian picture of the world is colored by dominant hues of self-interest and utter absence of natural beneficence," comments biologist Jeffrey Schloss (Schloss, 288). If human values are to be grounded in our evolutionary biology, then what most of us call evil will be held up as the model for the good.

From selfish genes to original sin

Has this science of evil provided a drinkable set of ideas for the theologian who affirms the doctrine of *original sin*? It certainly looks that way. Evolutionary psychologist Robert Wright pours a frosty glass of scientific ice water right in front of the thirsty theologian. "The roots of all evil can be seen in natural selection, and are expressed (along with much that is good) in human nature. The enemy of justice and decency does indeed lie in our genes" (Robert Wright, 151). U.S.

National Medal for Science winner and former president of the AAAS, Francisco J. Ayala, serves an intellectual cocktail that mixes science and theology. "Evolution may contribute to a possible theological explanation of defects, dysfunctions, cannibalism, parasitism, predation, and other 'evils' of the living world" (Ayala, 78). Theologian Gregory Peterson imbibes deeply. "In sociobiology, original sin becomes naturalized, providing both an origins story and an account of human behavior" (Peterson, 273).

Theologians Keith Ward and Philip Hefner similarly weigh in. Ward makes the claim that:

evolutionary biology . . . offers a helpful account of how moral failure follows naturally, if not inevitably, from the dispositions to lust and aggression that are part of the human biological inheritance . . . sin becomes the natural expression of biologically inbred tendencies.

(Ward, 278)

Former *Zygon* editor Hefner contends that "biology enriches our understanding of the inherent character of sin" (Hefner, 141).

Although appeal to an evolutionary model deletes the idea of a specific historical event such as the fall from paradise in the Adam and Eve story, what these post-Darwinian models of evolution offer is scientific support for the theological concept of inherited sin or original sin. Observes Exeter theologian Christopher Southgate:

The classical theological view of the problem of violence and suffering in nature is to see it as a product of the human fall into sin. However, if standard evolutionary accounts of nature are correct, then predation, violence, parasitism, suffering, and extinction were integral parts of the natural order long before *Homo sapiens*.

(Bennett, 57)

Robert John Russell labels this inheritance as *the Fall without the Fall* (Russell, 11).² The takeaway point is this: we humans have inherited our violent propensities from the animals who preceded us in evolutionary history.

But, it's not all bad. Most theologians think of the human condition in terms of ambiguity. On the one hand, we are born into a life of sin which began long ago and which we cannot avoid inheriting. On the other hand, we have the potential for moments of goodness, of heroic love, of altruistic caring that goes beyond disguised self-interest. What actually happens in human life is a mixture, a conflictual contest between good and evil.

One challenge to the theologian is that the sociobiologist relies upon an axiom that apparently eliminates this ambiguity: all altruistic behavior is actually selfish behavior. Altruistic behavior still promotes the long-term goal of the selfish gene; namely, to perpetuate its own DNA sequence. Even though at the level of the organism, altruism may appear to us to be virtuous, the underlying drive of

the gene to replicate is relentless and pitiless. "Scratch an 'altruist', and watch a 'hypocrite' bleed," has become a motto (Ghiselin, 247). If this scientific position is correct, it could never predict human love for the other, human zeal for universal justice, human caring for out-groups who do not contribute to the survival of the in-group.

The conceptual question aching for expanded understanding is this: why do we humans divide our race into in-groups and out-groups? When we compare the early Hamilton Rule with the later Wilson, the explanation based on the selfish gene slips through our fingers like sand. A group selection theorist would say that reliance on the in-group replete with reciprocal altruism leads to drawing the line between us and them, to be sure; yet survivability or fitness would still apply to the immortal genes who benefit from in-group dynamics. Wilson writes:

[H]uman beings are strongly predisposed to respond with unreasoning hatred to external threats and to escalate their hostility sufficiently to overwhelm the source of threat by a respectable wide margin of safety. Our brains do appear to be programmed to the following extent: we are inclined to partition other people into friends and aliens.

(Wilson, 1978, 122)

This applies whether Wilson appeals to the selfish gene or to group selection. Our hatred of the out-group is based in the biology that programs our brains.

Is this an *explanation*, or is it merely a *re-description* of the problem? Note what is missing: no appeal is made here to gene expression. Sociobiologists do no molecular experiments on actual genetic processes to discover patterns in gene expression. Rather, they observe group behavior in the insect world and to some extent in the human world. Then they proffer a single genetic hypothesis to explain what they observe in both. Proposing a hypothesis is standard scientific method, to be sure. However, in this case, a genetic explanation is being proffered. One would expect experiments in the laboratory with human genomes to confirm or disconfirm the hypothesis. At this point, no empirical data gathered from molecular biology has been produced that demonstrates the selfish gene principle. We must conclude that what we have here is a re-description of the question, while the answer remains scientifically unknown.

The theologian must assess the scientific credibility of the selfish gene theory before incorporating it as an aid in explaining the human condition. And, frankly, the scientific value of sociobiology and evolutionary psychology is suspect. It is important to note that sociobiologists do not study any genes directly. Rather, sociobiologists – along with evolutionary psychologists – advance a hardcore hypothesis that DNA sequences seek to replicate themselves regardless of which genes appear within those DNA sequences. The brute force of gene replication is the explanatory principle. *Human behavior is explained as the result of gene replication, not as the result of gene expression.* It is this replication theory that occupies our attention in this discussion. In the event that molecular biologists would find specific gene complexes which in their expression lead to either sinful or altruistic

behavior, it would not count in the sociobiological calculus. All that counts is brute replication, regardless of which genes are in question. The field of molecular biology would stimulate a very different theological analysis from one beginning with sociobiology.

There is no doubt that Charles Darwin's original theory of evolution and its subsequent incorporation of molecular biology leading to the neo-Darwinian synthesis is good science; nevertheless, we must retain a level of scientific suspicion regarding the value of offshoots such as sociobiology and evolutionary psychology. These latter fields provide us with a purported science of evil; and this attempt to explain evil in terms of the selfish gene is at minimum interesting, even if it falls short of credibility.

Loving those in the other groups

Even if the genetic science of evil espoused by sociobiologists remains incomplete, the theologian should ask about its potential implications. When we consider values such as self-sacrificial love or *agape*, we find a theological idea that simply does not fit into the selfish gene scheme. Kin altruism within a family, clan, or tribe – or perhaps even a race – fits the selfish gene theory, because love and care within the kin group would promote reproductive fitness for the DNA sequence in question. Reciprocal altruism and group selection accomplish the same end, even if a bit more indirectly. But an ethical ideal that extends this loving service to someone who is other, to someone outside the kinship circle or outside the circle of reciprocators, simply does not fit this explanatory model. "Much as we wish to believe otherwise," comments Dawkins, "universal love and the welfare of the species as a whole are concepts that simply do not make evolutionary sense" (Dawkins, 2). The theologian must ask: is this genetic explanation accurate? If accurate, does it reinforce the Christian understanding of sin as an inherited disposition toward selfishness? Does it render as hopelessly idealistic the Christian ethic of universal or self-sacrificial love?

The Christian theologian simply cannot accept an ethic that builds on tribal distinctions between the in-group and the out-group, according to which the in-group is good and the out-group is evil. This is not where the line between good and evil should be drawn. The line between good and evil should be drawn within the individual's conscience, not between the home team and the away team. "The line between good and evil does not run between 'us' and 'them' but through every individual and every society," writes N.T. Wright (N.T. Wright, 22). Beloved Jewish existentialist Martin Buber makes the same point regarding:

the rift between those who do violence and those to whom violence is done, the rift between those who are true to God and the apostate element, running not merely through every nation, but also through every group in a nation, and even through every soul.

(Buber, 19)

Theologically speaking, the split between in-group and out-group is not the split between good and evil. If anything, the split is itself a contribution to evil. The drawing of a line between good and evil that places one's in-group on the good side becomes the lie that accompanies human sin, and it provides the self-justification employed by sinful persons or groups when perpetrating violence, destruction, cruelty, and suffering. Any attempt to construct an evolutionary ethic based on this foundation would only perpetuate the lie we tell ourselves. It would turn a science of evil into an evil of science.

The perpetuation of tribal rivalry hides the more profound realities of the human soul while, simultaneously, hiding the realities of the goodness that lies beyond our own tribe. The biblical understanding of God's love and of divinely inspired human love is that it is universal. It goes well beyond one's tribe, even to loving one's enemy. Would such a science of evil as that propounded by sociobiologists render the biblical ideal as just that – an impossible ideal? Or, can we overcome our genetic predisposition? If we would limit our analysis of evil to the sociobiologist's fenced in domain of inquiry, such questions about the human soul and the religious ideal could not be posed, let alone dealt with.

The evil of science

Science is one thing, scientism is another. *Scientism* is an ideology or even a secular religion that places scientific knowledge into the position of saving the human race through technological advance. One transhumanist affirms this creed: "Science and technology increasingly offer us the chance to overcome the limitations of the human condition. Therefore, let us believe in science" (Young, 16). Perhaps the promethean mood of scientism is what propels some among us to try to achieve the impossible, namely, to create a science of evil.

Scientists who believe in scientism write their own revisionist history, a history cast in the concepts and vocabulary of evolution. According to this view, religion is less evolved and science is more highly evolved. Religion is violent, whereas science is peaceful. Our moral obligation, therefore, is to rid society of religion and replace it with science.

Physicist turned astrobiologist Paul Davies provides an illustrative example:

For thousands of years society was based on religion. Warfare, hatred and oppression resulted as religious groups sought to impose one particular set of beliefs upon other groups. In contrast, a science-based society has existed for very few years. In that time many of the burning questions so long pondered by the adherents of religion have been quietly answered. No wars, no hatred, no oppression have resulted between the proponents of scientific opinions, because science does not deal in beliefs, but in facts.

(Davies, 201)

Science can save us from hatred and warfare because it deals in facts, not beliefs. So, the argument goes.

One might wish to ask Dr. Davies whether or not he has ever heard of World War One with its mustard gas or World War Two with its atomic bombs. One might wish to ask him whether science could be responsible for evil. He has an answer: science is not subject to evil; technology is subject to evil. "Pollution, nuclear warfare, genetic engineering and mind control are all examples of the misuse of science in the form of technology" (Davies, 202). What appears to be evil perpetrated by science is in fact evil perpetrated by technology. Science is innocent. Science escapes such accusations, because science consists of the pure search for pure knowledge. Technology contaminates pure science. Scientists belong to the pure in-group, whereas religion and technology belong to the contaminating out-group. In short, no moral ambiguity clings to science.

Unfortunately, the role of science in concrete human history does not look exactly like the pure discipline Davies describes. When theologians look at science, what they see is ambiguity. Theologian Langdon Gilkey describes the "ambiguity of science: its possibility . . . to be, strangely, an instrument of evil as well as a bearer of good" (Gilkey, 75). With this ambiguity in mind, let us remind ourselves briefly of two World War Two examples of horrendous evil and suffering produced by scientific theory accompanied by technological practice: eugenics and atomic weaponry.

The eugenics movement began with the cousin of Charles Darwin, Francis Galton, who allied himself with the Social Darwinism of Herbert Spencer. Galton believed that science could help speed up the progress of evolution. Galton focused on reproduction. Which families should make babies? Galton answered: those whose parents are smart, able bodied, strong, and healthy. Such parents should give birth and send their heredity on into future generations. These are the fit who should survive. Who, then would be considered unfit? The eugenicists answered: the physically disabled, mentally retarded, those given to petty crime, or poor who are a financial drain on the more productive members of *laissez faire* capitalist society. This led to massive programs of sterilizing of the mentally retarded, physically handicapped, and prisoners in Britain, France, and the United States. Eugenic science became incorporated into Nazi ideology in the form of racial hygiene (*Rassenhygiene*). The race most fit for an evolutionary future, said the Nazis, is the Aryan race. To the list of the unfit – those whose lives are not worth living – the Nazis added communists, homosexuals, gypsies, and Jews. The policy of racial hygiene motivated the creation of concentration camps and the gas chambers that today we refer to as the Holocaust. In addition to selective breeding, the genocide of perhaps six million human persons became the tool for speeding up evolution. An evolutionary science of evil became one of the most horrendous evils of science.

So also did the atomic bomb. Nuclear physics is an ambiguous discipline, because it can provide both good and evil technologies. Physicist J. Robert Oppenheimer's story is instructive. Oppie, as he was called, directed the Manhattan Project, which invented the atomic bombs dropped on Hiroshima and Nagasaki that ended World War Two in the Pacific Theater. Oppenheimer was a hero to the victorious allies. Even so, "the physicists have known sin," proclaimed Oppie in 1948, "and this is a knowledge which they cannot lose" (Bird and Sherwin,

2005, p. 388). Once Pandora's box had been opened, and nuclear weapons knowledge began spreading, Oppenheimer sought to slam the lid down again through internationalizing atomic oversight. He proposed:

that in the field of atomic energy there be set up a world government. That in this field there be a renunciation of sovereignty . . . to protect the world against the use of atomic weapons and provide it with the benefits of atomic energy.

(Bird and Sherwin, 388, emphasis in original)

He pressed his case in the White House and the United Nations. His efforts failed. Then President Harry Truman led America into the dizzying arms race of the Cold War. Science, despite its knowledge and power, could not save us.

Victor Ferkiss comments: "Hiroshima is often spoken of as the scientific equivalent of the apple in the Garden of Eden, the eating of which ends innocence by imparting a knowledge of good and evil" (Ferkiss, 48). Science knows evil.

Conclusion

Our fundamental experience of evil is complex and profound. On the one hand, we are born into a world of evil that carries us along like a rapidly flowing river. On the other hand, we freely choose activity that reaps violence and suffering and death. We inherit evil, and we bequeath evil.

Scientific and theological attempts to provide a rational explanation for evil fall short of providing an exhaustive explanation of what we experience. We have looked at two scientific attempts to explain evil: (1) Ernest Becker's "Science of Man"; (2) the account offered by sociobiology and evolutionary psychology to explain the violence of *Homo sapiens* by appeal to the selfish gene in evolutionary biology; and we have looked briefly at (3) theological assessments of the science of evil. We gave special attention to the evil perpetrated by science in World War Two, noting the role of Social Darwinism in the Holocaust and the role of physics in developing the atomic bomb. Our thesis has been this: we understand much more about evil than we can explain.

Notes

- 1 When sociobiologists or evolutionary psychologists say a parent and child share half their genes, it is misleading. Molecular biologists would point out that all human beings share more than 99% of their genes with the human race generally. The fraction that distinguishes one individual from another is less than 1%. So, the 50% percent genetic continuity between parents and children is only 50% of that fraction, not 50% of the entire human genome.
- 2 Russell makes the point that our biology is grounded in the physics which underlies it. He suggests that the second law of thermodynamics, or entropy, provides the precursor for the evil we experience at the human level. "Human sinfulness does not arise entirely in a vacuum but . . . there are precursors not only in evolutionary biology but even in fundamental physics" (Russell, 241).

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