

THE CREATED CO-CREATOR: WHAT IT IS AND IS NOT

by Gregory R. Peterson

Abstract. In this article I briefly assesses Philip Hefner's concept of the created co-creator by considering both what it does and does not claim. Looking at issues of reductionism, biological selfishness, biology and freedom, and environmental ethics, I point out strengths and weaknesses in Hefner's conception of the created co-creator.

Keywords: created co-creator; environmental ethics; freedom; Philip Hefner; sociobiology;

There are few theological ideas that have caught on so well as that of the created co-creator. Frequently cited, Philip Hefner's succinct phrase describing the place of humanity in the created order has inspired many. At the same time, it also has offended some, who see in it too much presumption about the human role in creation. Popularity (and notoriety) is important for the spread of ideas, but it also is inevitably distortive. The phrase itself—created co-creator—is pregnant with possibility, catchy both in its alliterative appellation and in its succinct expression of what it is to be human. Yet, like Thomas Kuhn's use of the word *paradigm*, it sometimes is taken to imply something more or even something different than its original intent. When all is said and done, what actually is the created co-creator?

What follows is a brief analysis and, to a lesser extent, assessment of Philip Hefner's concept of the created co-creator within the context of his larger theological work, most notably *The Human Factor* (1993). It is an assessment with a twist, for, while I certainly wish to understand what the notion of the created co-creator is, I will mainly proceed by analyzing what it is not. This may seem peculiar, but the reasons for this should become

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clear. On one hand, clarifying what the created co-creator is not distinguishes the theological vision intended by Hefner from ways that it is sometimes used by others. On the other hand, by considering what the created co-creator is not, it can also be seen how Hefner intends the created co-creator to be understood, which is sometimes hidden by the caution with which he has explored the idea. Hefner's theology of the created co-creator is interesting, suggestive, and intriguingly incomplete. Considering the alternatives may, at the very least, serve to help suggest future directions for exploring the concept.

WHAT THE CREATED CO-CREATOR IS

Hefner first laid out his understanding of humankind as created co-creators in an article on the doctrine of creation, part of a larger introduction to theology designed for seminary students (1984). In both this and later works, it is clear that the label *created co-creator* is intended in no small way to denote what it means to be created in the image of God. Recognizing this at the outset is to recognize the theological tradition behind the concept, which is sometimes treated simply as a new idea of humankind's relationship to God and world. While there is much that is new and refreshing in Hefner's interpretation, it also is important to note the theological legacies that stand behind it.

Created co-creator is a thoroughly theological concept. By this I do not mean simply that God is lurking somewhere in the background but that the concept of created co-creator is intended to provide an ultimate and even normative account of human nature. While informed by the physical, biological, and social sciences, it nevertheless dares to go beyond them in order to portray humankind and reality the way they "really are," an expression that Hefner uses several times in *The Human Factor*.

To be a created co-creator is, first of all, to be created. Hefner understands this in both a scientific and a theological sense. Scientifically, we are created in the sense that we, as individual human beings, do not appear on the scene *sui generis* but rather are born to a set of specific parents with specific backgrounds. We are spiritual beings, influenced by community and heritage, as well as biological beings, influenced by the laws of genetics and evolution. Theologically, we are created in the sense that we are not, to use the language of Paul Tillich, the ground of our own being. Our ultimate source lies outside of ourselves, and our nature in turn points to and relies on this ultimate source. In the Christian tradition, this ultimate source is understood to be the Triune God, who is in relation to nature and history in quite specific ways.

We are not simply created creatures, however. We are created creators. More so than many, Hefner emphasizes the category of freedom, although

this is understood in an empirical rather than a metaphysical way. Whatever the case may be metaphysically, we empirically experience freedom as part of our nature; we exercise at least some modest control over our own lives and cannot avoid the necessity of making decisions. Beyond this empirical (and one might say scientific) level, we may also be said to be theologically free. On Hefner's approach, not only are we empirically free in relation to our immediate surroundings, but we exercise considerable freedom in relation to God, the ultimate source of all. This is, it must be noted, a much more dramatic and significant claim, and it is from this theological understanding of freedom that the concept of created co-creator draws much of its insight and importance. At the same time, to be a created creator implies a necessary tension. In Hefner's work, to be created is to be natured. That is, there is a fixity to human nature that cannot be escaped but that is nevertheless in relationship to the very freedom we exercise. To be a created creator nearly implies paradox, for it asserts and denies limitation at one and the same time. On Hefner's analysis, we are both determined and free—an important but seemingly self-contradictory insight.

Hefner asserts that we are not only created creators but created co-creators. The *co-* is in some ways the most important, intriguing, and troublesome term. It is also the most theological, for it implies not simply that we are creating in and of our own right but that our creative acts are in cooperation with God's creative acts in a way that suggests partnership rather than subordination. To grasp the significance of this, it is useful to contrast Hefner's "co-creator" with the safer "sub-creator," used by Christian author and philologist J. R. R. Tolkien (famous for writing *The Hobbit* and *The Lord of the Rings*) in a long and well-regarded essay, "On Fairy-Stories" (Tolkien 1984). Tolkien's sub-creator has theological connotations similar to Hefner's co-creator. But the implications are subtly and importantly different. To sub-create is to imitate or to work on what has already been thought out. It may imply initiative on the local level, but it reminds us that the master task always belongs to God.

The implication of co-creator, however, is radically different, for it suggests that we are as much in control or responsible for creation as God is. It suggests that there is no blueprint for the future; the future is open, not determined. This sort of openness, radically shaped as it is by human freedom, is as thrilling and terrifying as the rocky course of human history, with considerable significance for thinking through issues of theodicy. The *co-* is suggestive of not only the role of humanity but also the nature of God, for it implies a God who radically values freedom over control. The deceitfully diminutive *co-* is in some ways the most radical and least appreciated part of Hefner's project.

WHAT THE CREATED CO-CREATOR DOES NOT IMPLY

This incomplete sketch gives some idea of what the created co-creator is. The idea of the created co-creator is rich with interesting, interpretive possibilities, a number of which Hefner has developed. It is only when the alternatives begin to be fully considered that the implications and imprecisions of Hefner's work start to become clear.

It Does Not Imply that Theology is Reducible to Natural Science. The first response might be, "Why think this?" After all, it is clear that Hefner is not a starry-eyed reductionist but is clear about both the potentials and some of the perils of modern science. Yet, he also employs a symbolic approach to theology whose precise meaning is at times ambiguous, especially with regard to the interpretation of the sciences. In *The Human Factor* this is complicated by Hefner's conscious unwillingness to lay out a sophisticated doctrine of God. His reasons for doing so are several, but they can give the impression that perhaps there is no doctrine of God behind the work at all. This impression, for some, may be reinforced by his later chapters, which endorse a (cautiously) functionalist approach to understanding myth and ritual. Read in a particular way, this can be erroneously construed as implying that religion can be reduced to function, rather than understanding that, however we understand the source of religion, religion must necessarily perform functions in society if it is to perpetuate itself.

The main problem here seems to be Hefner's metaphysical shyness. This shyness has something to commend itself, because it recognizes the difficulty of speaking of God in a rigorous way, particularly in the intellectual context of the late twentieth century. Metaphysical shyness also can allow a multiplicity of readings, implying that the created co-creator is compatible with more than one theological perspective. It also clearly taps into the tradition of both Eastern and Western Christianity that emphasizes God's mystery and incomprehensibility.

Metaphysical shyness should not, however, be taken to imply or endorse a reductionist approach. Hefner's resistance to reductionism may not be so clear in his metaphysical commitments, but it is very clear in the soteriological implications of the created co-creator. When Hefner lays out the "hard core" of his theology (following Lakatos), it is clear that the soteriological character of the created co-creator is at the center. Here, the created co-creator is not simply a description of how human beings behave, it is a prescription for how we should act and think of ourselves. This prescriptive character of the created co-creator is most explicit in the final chapters of *The Human Factor*, where Hefner links the created co-creator to a Christian understanding of altruism that prescribes a degree of cooperation beyond that acknowledged in the biological sciences. Hefner even states: "Theology suggests that theories of epigenetic rules or strate-

gies of self-interest are not enough to complete our understanding of altruistic love; we require also ways of discussing the hypothesis that altruism is an intrinsic value, rooted in the fundamental character of reality” (1993, 209).

This passage may be one of the most significant statements concerning what the created co-creator is about. Facilely, it can be read as a statement of conflict between theology and science. Biological studies of cooperation suggest that, within an evolutionary perspective, kin altruism and reciprocal altruism are evolutionarily stable but stronger forms of altruism are not. It would seem to me, however, that a better way of understanding Hefner’s intent is to read this statement as an explication of the relation of religion and science in a way that suggests their proper domains and extents. As a science with a particular purview, biology can explain certain kinds of cooperation but not others. Because theology’s task is far wider, concerning as it does the ultimate nature of things, its perspective goes beyond what the studies and experiments of biology establish. It is not that biology is wrong but that it is simply incomplete, and incomplete in a way that has dramatic importance for understanding human nature and prescribing human purpose.

It Does Not Imply that Biology Is Evil, Culture Good. An important review and critique by Langdon Gilkey (1995) argues that Hefner’s account of human nature is flawed. In Gilkey’s view, Hefner divides human nature in two: biological nature is the source of selfishness and therefore (in a sense) sin, while our goodness comes from the influence of culture and cultural norms. Gilkey’s critique has been influential, but a careful reading suggests that he is wrong. In places, Hefner does make clear that there is a certain artificiality to the gene/culture split, noting that, while the dualism is useful, it is not absolute (e.g., Hefner 1993, 102–3). He also notes that, although much of selfishness can be seen as being rooted in our evolutionary history, it is quite clear that cultural evil exists as well. Nevertheless, it is easy to get the impression that such a split, with the consequences that necessarily ensue, is implied. Why is this?

It seems that the fault lies not so much with Hefner’s final analysis as with the scientific sources that he uses to buttress his position. Although Hefner does not conclude that genes are the source of evil and culture the source of good, many of his scientific sources do. In several places, Hefner cites the work of psychologist Donald Campbell (1975), who is well known for arguing that religion has historically played a positive role in society by providing well-winnowed wisdom to counter the selfish impulses urged on us by our genes. On Campbell’s view, our genes drive us to selfish and, in a social context, almost self-destructive behavior. What we call good is supported by cultural traditions, and religion plays a particular role with its constant injunctions against self-gratification and exhortations toward self-sacrifice.

In citing Campbell, Hefner is citing not an idiosyncratic position but one that has been supported in various ways by a number of scientists, most notably (and notoriously) the founders and followers of sociobiology. Sociobiology was conceived by E. O. Wilson (1975) as a discipline devoted to explaining social behavior in general and altruistic behavior specifically. Wilson and other sociobiologists see selfishness as the biological norm and altruism as the apparent exception to be explained as a special and complex form of selfish behavior. In human beings, culture is understood to be the source of altruistic behavior. For some sociobiologists, there may even be a sense in which culture can defy the selfish impulses of genes (Dawkins [1976] 1989). This implied selfishness of human nature also has been taken up by evolutionary psychologists in their reworking of sociobiology to include psychology and cognitive science (Barkow, Cosmides, and Tooby 1992).

Hefner's work is replete with references to Campbell, Wilson, Richard Dawkins, Jerome Barkow, Leda Cosmides, and John Tooby, among other like-minded scholars. As a result, it is easy to get the impression that Hefner agrees with the sources that he uses, but this is not the case. Rather, like many other scholars in both religion and philosophy, Hefner seems to be critical, if quietly so, of the claims of sociobiology when applied normatively and even descriptively to human nature. This is an important point and worth amplifying. Many scholars in the science-and-religion dialogue have been quite loud in their critique of sociobiology (Peacocke 1986; Stenmark 2002). Some have taken such critique to an extreme, implying that sociobiology has no scientific basis whatsoever and should be dismissed as a revival of social Darwinism or worse. That Hefner engages these scholars at all indicates that he is not of the same mind, and in my estimation he is at least partly correct. Whatever sociobiologists may say in their popular works (which often tends toward the extreme), the research that undergirds sociobiology is no passing fad and must be taken seriously.

At the same time, it is important to note that sociobiology as a discipline has often skewed valid research to emphasize genetic self-interest and selfishness in a way that has unpleasant moral connotations. While Dawkins and others have been trumpeting the selfish gene, others have worked hard to show that cooperation in the biological world is not an afterthought but part and parcel of the dynamic of evolution (de Waal 1996; Sober and Wilson 1998; Margulis 2000). Any biological concept of cooperation and altruism will still fall significantly short of the Christian call for altruistic behavior, but the work of these scholars suggests that the story of cooperation and competition, altruism and selfishness, is quite different than the version often given by sociobiologists. The story of human history is not simply a story of selfish genes versus cooperative culture. Rather, cooperation and competition occur at many levels, producing both beauty and ugliness, good and evil. The implication of this research for Hefner's con-

ception of the created co-creator is potentially significant, for it suggests that Hefner's position on human nature is more accurate than that of the scientific sources he actually cites.

It Does Not Imply that We Are Either Wholly Free or Wholly Determined. A key feature of the created co-creator is the emphasis on human freedom. Central to Hefner's account is the dual inheritance of nature and culture, with nature often standing for what is determined in human life and culture standing for that which is free. Of course, such a dualism is inadequate, because there is some freedom (so to speak) in gene expression and much that is determinate (and determinative) in culture. As in much of his thinking on the created co-creator, Hefner avoids metaphysical arguments about freedom and determinism in favor of empirical considerations. Empirically, Hefner observes, we are in some sense both free and determined. On one hand, human beings are confronted with the necessity of making choices. Freedom in this sense is not an abstract quality but an unavoidable reality that we face every day. We are even, says Hefner, determined to be free. Human genes direct the development not of an organism that has only a fixed pattern of behavior but of one that must make decisions to survive. We are, somewhat paradoxically, free by nature.

On the other hand, Hefner argues, our freedom also is circumscribed by the selfsame genetic inheritance. We are by nature selfish, a fact that can be significantly (but not exclusively) attributed to our genetic and evolutionary heritage. In Hefner's view, this provides a means for reinterpreting the Christian doctrine of original sin along evolutionary lines as an awareness of the inner conflict within ourselves as symbiotic creatures of genes and culture.

Hefner views such an abstract question as whether we are metaphysically free as largely irrelevant to the reality of the human condition. It may or may not be the case that the experience of freedom can ultimately be correlated with a lower-level physical determinism. Such a fact, one way or the other, will fail to sufficiently inform us as to how we should act with the freedom we have.

Hefner's approach to metaphysical freedom and determinism is prudent, if ultimately unsatisfying to those who prefer a definitive statement on the issue. It is tempting to believe that the sciences, when reified into a philosophical naturalism, necessarily imply a metaphysical determinism. Such reification, however, precisely begs the question at hand, for it necessarily ignores the empirical (albeit unscientific in the narrow sense) experience of freedom that we are all aware of, sometimes painfully. Moreover, the sciences together suggest that any statement on human freedom and determinism in a metaphysical sense must, in the end, be highly nuanced, for even a deterministic account of human activity must allow for the amazing flexibility of human behavior.

It is important to note that much of the nuance comes from the cognitive sciences and that this has some impact for Hefner's empirical understanding of human freedom and determinism. The complexity of human behavior is matched by the complexity of the human brain, with its 100 billion neurons networked together in a way that still defies precise analysis. Much of our behavior and cognition may be said, in a sense, to be fixed or programmed, but much is also intensely sensitive to a range of developmental and environmental cues. More important, our brain alone does not tell the whole story, as it is connected to both our body and the environment, both of which provide constantly changing feedback.

In his account of human freedom, Hefner does note the role of the central nervous system, the complexity of the brain, and human biology. It would seem, however, that these factors are much more important for Hefner's empirical account of human freedom and determinism than he makes clear. In several places, Hefner emphasizes that human beings are a symbiosis of genes and culture. This dualistic dichotomy is very much part of the biological and especially sociobiological literature, but ultimately it is quite inadequate. As Ted Peters has observed, culture does not so much supply freedom as another form of determinism, so that human beings are bound by not one determinism (genes) but two (genes and culture) (Peters 1997).

A satisfactory account of human freedom must consider not only genes and culture but also the complex of brain/body/mind/person, for it is here that freedom ultimately emerges. In this vein, it is important to emphasize, as Hefner does, that we are determined to be free. That is, our biology is such that we necessarily develop into beings that cannot avoid making decisions. But note the character of freedom involved. Each brain/mind/person develops differently. At the level of the brain, genes seem to only broadly program the course of brain development, which is immensely affected by its environmental context. The developing brain is extremely plastic. Infants are born with far more neurons than they will use, and early child development is characterized not only by growth and development of neurons and neuronal connections but also by massive die-offs of those neurons that are not used by the brain/mind/person as he or she interacts with the environment (cf. Edelman 1992). Importantly, this interaction is not simply passive. Not only does the child experience the environment, the child also acts on the environment, so that the brain is, in a sense, self-formed.

Yet, the freedoms we have are of specific kinds. Hefner emphasizes the experience of genetic/evolutionary selfishness as a determined feature of our existence. But the kinds of freedom that we have and the constraints upon these freedoms are broader and subtler than Hefner points out. The developing science of emotion is but one instance of this sort of constraint. Work by Antonio Damasio and others points to the integrated character

of reason and emotion. There is an affective character to reasoning that, when impaired due to brain damage, results in severe mental dysfunction. Such individuals, it would seem, can reason but not make decisions (Damasio 1994, chap. 3). The appearance and regulation of these emotions, in turn, are dramatically affected by the presence or absence of neurotransmitters such as serotonin, the levels of which are partially affected by behavior and environment. Inasmuch as emotions are tied to issues of human freedom, well-being, and suffering, they become theologically relevant. Persons who suffer from depression do indeed suffer, and in a way that may have little or nothing to do with issues of selfishness. Such suffering, in turn, has complex antecedents and reveals both our freedom and lack of it. Individuals who suffer from depression may do so in part from personal choices (such as involvement in an unhappy relationship); depression, however, is also related to environmental and biological/genetic factors. In extreme cases, it can be seen as constraining and even destructive to freedom. Yet, individual action (determination to get help), environment (ending an unhappy relationship or seeking counseling), and even biology (altering serotonin levels through medication) can restore freedom in many cases.

While these considerations emphasize the personal character of freedom, they highlight the social aspects of freedom as well. This becomes increasingly clear as society develops increasingly sophisticated forms of biological and technological intervention on our own species. Increasingly, we will have the opportunity to decide which kinds of constraints that individuals must live with. Paradoxically, we are becoming increasingly free to determine our own character as well as that of succeeding generations.

It Does Not Imply a Biocentric Ethic. The theory of the created co-creator is as much (if not more) a statement of soteriology and the way things should be as it is a statement of metaphysics and the way things are. The created co-creator is, in Hefner's estimation, radically free, and this freedom is to be directed toward the love of neighbor and world. For Hefner, the development of altruistic love is the central task of the created co-creator, and the expression of that altruistic love is directed primarily toward our fellow human being. According to Hefner's central thesis (his "hard core"), the task of human beings (created co-creators) is to "birth the future that is most wholesome for the nature that has birthed us" (Hefner 1993, 264). Unlike many environmental theologies, Hefner's concept of nature includes and even emphasizes human communities where altruistic love can be experienced.

Does a theology of the created co-creator support an environmental ethic, and, if so, what kind? The answer to this question stands to tell us quite a bit about how Hefner conceives the created co-creator. Environmental theology of the past three decades generally has been critical of

anthropocentrism in theology and ethics and has argued for various forms of a biocentric ethic that acknowledges the intrinsic value of animals and nature as a whole (McDaniel 1989; McFague 1997), with the implication that animals and nature may be said to have certain rights that should not be infringed upon. A radical form of biocentrism would imply that there is, in fact, nothing special about humans and that it is only human presumption that places our rights above those of other creatures.

Hefner, too, is sometimes critical of the anthropocentrism of the Christian tradition, and he calls for a non-anthropocentric revision of the doctrine of the image of God (Hefner 1993, 239). At the same time, it is clear that, by virtue of being created co-creators, humans nevertheless play a special role within the created order. For Hefner, however, this is not to be taken merely as another form of anthropocentrism. Rather, it is to eliminate the thick border often placed between culture and nature. The presumption of many an environmental ethic is that the problem with the environment is human beings, and the solution is to get rid of any kind of human interference in order to, as much as possible, restore nature to its pristine state.

But, according to Hefner, humans are a part of nature. Citing Pierre Teilhard de Chardin, Hefner speaks of the hominization of nature and its evolution (Hefner 1993, 154). We ourselves, with all of our technological advancement and alteration of the environment, are a stage in the course of natural history. To value pristine nature over against human civilization is to misunderstand both nature and civilization. Nature is not static but dynamic, and we are now the most dynamic force of nature present.

On the surface, there could be no more glaring opposition than this, and it would seem that Hefner and many environmental theologies are strongly at odds with one another. At first glance, Hefner's created co-creator seems almost anti-environmental, and a jaundiced reading could perhaps easily side him with a naive technological optimism and even progressivism. This would be a mistake, however. Hefner does recognize in several places the scope of environmental destruction and our responsibility for it. The created co-creator is not anti-environmental but suggests a quite different route for thinking about our relationship with the natural world.

It is worth noting that no small part of this stems from the impact of evolutionary theory on Hefner's thought. For many involved in environmental philosophy and theology, the science of choice is ecology, for it reveals the intricate relationships between organisms as well as the effects of extinction and habitat destruction on whole ecosystems and ourselves. A tendency of environmental thought informed primarily by ecology is to think of nature in static terms and to emphasize its fragility in the face of radical change. As a result, environmental theologies tend to strongly contrast nature with civilization and to emphasize an ethic that imposes limits

on human activity. For Hefner, however, nature is dynamic and evolving. There can be no return to an original state, because nature is always changing. As a result, human change of nature may have negative consequences, but it is not intrinsically bad. Once again, we see the radical freedom Hefner attributes to the created co-creator. We do have the power to change the planet. Such change could be good, or it could be radically destructive. The choice is up to us.

Hefner's resolute refusal to see human beings as apart from nature may lead to some interesting possibilities. Because of the radical freedom of human beings, it might be said (somewhat poetically) that we *are* the freedom of nature, that especially in us nature acts. By virtue of our technology, we are also the technology of nature. At one point Hefner refers to human attempts at the manipulation and engineering of nature as the development of a technonature (Hefner 1993, 154). More recently, he has compared his concept of created co-creator to that of Donna Haraway's cyborg (Hefner 2001; Haraway 1991). A cyborg is a being composed of both nature and technology. Many of us can be said to be cyborgs in a small way, through the use of eyeglasses or contact lenses or by the surgical placement of artificial hip or knee. One might even say that we are cyborgs by nature, so intrinsic is technology to our everyday life. Through Hefner's concept of created co-creator, one might go a step further and say that nature becomes cyborg through human activity, that we are in the midst of the technologization of nature.

For many an environmentalist, such language sends a chill down the spine, for the immediate vision evoked is one of forests paved over, wild grasses replaced by monoculture crops, and genetic engineering run amok. Certainly, this is not Hefner's vision—recall that the created co-creator is to birth a wholesome future for nature. But the question is, What precisely is this wholesome future for nature? Hefner is largely silent here, where much could and needs to be said. The created co-creator, with its emphasis on dynamism, human freedom, and altruistic love, potentially has much to offer.

It Does Not Imply a Narrowly Denominational Interpretation. Hefner's Lutheran affiliations are well known, and to a certain degree Lutheran concerns and emphases are part and parcel of Hefner's elucidation of the created co-creator. Categories of original sin, and nature, and grace, for instance, play prominent roles in the development of his theology. Members of other Christian traditions may have difficulty with some of these categories. At the same time, it is worth noting that Hefner's theological program avoids the kind of dogmatization that could kill a genuine dialogue, not only among different religious traditions but also with the sciences. Much of this is due to Hefner's methodology. Christianity is understood in a real sense as a proposal, a view of reality that must be

tested alongside others. In *The Human Factor*, Hefner heuristically uses the philosophy of science of Imre Lakatos to elucidate the tentative character of the theological task, but he has consistently used the language of proposal elsewhere also (Hefner 2000). Terming Christianity as a proposal, however, does more than cast theology as a science. It also acknowledges the future-directed and soteriological character of theological reflection. A proposal is not simply thought about. It is acted upon. Because proposals are tentative, they are open to correction and revision. To term the created co-creator as a proposal is to understand the dynamic character of the idea employed.

In light of this, it is worth considering what significance the created co-creator might have not only for the existing range of Christian traditions but for genuine interreligious dialogue as well. Certainly, inasmuch as the concept of the image of God is shared with Muslims and Jews, the created co-creator might be a starting point for an interreligious dialogue that also involves science and technology. It is less clear, however, how the created co-creator might translate for Hindu and Buddhist communities. Would the created co-creator bring new insights into commonalities, or simply an awareness of existing differences? If the latter, might it provide a means for understanding how these differences can be overcome? These are as yet unanswered questions, but they are provocative ones. The great difficulty of science-religion dialogue is to recognize the sheer plurality, both on the side of science and on the side of religion. An approach that engages this full range of plurality is sorely needed. If the theology of the created co-creator could provide such a resource, it would be a significant accomplishment.

CONCLUDING CONSIDERATIONS: THE CREATED CO-CREATOR'S NEXT PHASE

Understanding what the created co-creator is not is part of the task of understanding what the created co-creator is. It also suggests further avenues for exploration and development of what is, indeed, a highly creative proposal. This is an important point, for the theology of the created co-creator is incomplete in some important ways.

In particular, three lines of thought seem especially important to pursue. First, who is the God of the created co-creator? As indicated above, Hefner has elucidated a number of lines of thought that contribute to answering this question, but a more systematic and thorough appraisal would provide significant underpinnings for understanding who and what the created co-creator is. The development of a robust doctrine of God that can face the challenges of both modernism and postmodernism remains a daunting task. To be co-creators implies that God is also creator, not only in the distant past but also in the ongoing present. This at least

potentially raises the question of divine action, which has been of central concern to many in the science-religion dialogue. In what sense does God create, and how does that creativity impact both humanity and creation as a whole?

A second line of thought involves the question of the relation of theology and the sciences and, in particular, in what sense theology must construe any scientific account of anthropology as necessarily incomplete. Hefner believes that any theological anthropology must take the biological sciences into account, but he also indicates that a theological anthropology goes beyond the biological sciences. In the current context of scientific and philosophical debates about human nature, this is a tremendously important claim that deserves to be developed, for it suggests a rather different understanding of the relationship between science and theology than is common. In particular, Hefner's emphasis on the soteriological element of anthropology is key. One might say that the sciences, by their very methodological strictures, must provide a limited anthropology. A full, genuine (theological) anthropology must necessarily take the soteriological risk, to which the sciences can only incompletely contribute.

A third line of thought relates to the second. What is the destiny of the created co-creator? How, in fact, is this radical freedom to be used, particularly in relation to the many complex issues now facing our species? What is needed is the development of an ethic of the created co-creator that addresses the basic questions of who we seek to be and what we seek to do. With regard to issues of the environment, the created co-creator may shed new light on how to approach existing issues. In an era in which we are faced by increasingly rapid developments in biotechnology, a new concern with the capacity for global terror, and the continuing transition to an information-centered, globalized economy, to come to grips with the destiny of the created co-creator will be an important task indeed. In this potential ethical component, Hefner's theology of the created co-creator differs in some significant respects from other, more abstract approaches in the science-theology dialogue.

Addressing these three issues—the doctrine of God, the relation of science and theology, and the potential for ethical impact—would go far in developing the theology of the created co-creator. It also would help to fill an important lacuna in the contemporary theology-science dialogue. While the question of theological anthropology in relation to the sciences has been addressed by a number of scholars, it has yet to be sufficiently addressed. The theology of the created co-creator is an important step in this direction and promises to set the agenda for many years to come.

NOTE

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REFERENCES

- Barkow, Jerome H., Leda Cosmides, and John Tooby. 1992. *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*. New York: Oxford Univ. Press.
- Campbell, Donald T. 1975. "The Conflict between Social and Biological Evolution and the Concept of Original Sin." *Zygon: Journal of Religion and Science* 10 (September): 234–49.
- Damasio, Antonio. 1994. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Avon.
- Dawkins, Richard. [1976] 1989. *The Selfish Gene*. 2d ed. New York: Oxford Univ. Press.
- de Waal, Frans. 1996. *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*. Cambridge: Harvard Univ. Press.
- Edelman, Gerald M. 1992. *Bright Air, Brilliant Fire: On the Matter of the Mind*. New York: Basic Books.
- Gilkey, Langdon. 1995. "Evolution, Culture, and Sin: Responding to Philip Hefner's Proposal." *Zygon: Journal of Religion and Science* 30 (June): 293–308.
- Haraway, Donna. 1991. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge.
- Hefner, Philip. 1984. "The Creation." In *Christian Dogmatics* ed. Carl E. Braaten and Robert W. Jenson, 269–358. Philadelphia: Fortress.
- . 1993. *The Human Factor: Evolution, Culture, and Religion*. Minneapolis: Fortress.
- . 2000. "Going as Far as We Can Go: The Jesus Proposal for Stretching Genes and Cultures." *Zygon: Journal of Religion and Science* 34:485–500.
- . 2001. "Cyborg and Created Co-Creator: New Images of Being Human." Presentation at the American Academy of Religion, Denver, Colorado, November.
- Margulis, Lynn. 2000. *Symbiotic Planet: A New Look at Evolution*. New York: Perseus.
- McDaniel, Jay. 1989. *Of God and Pelicans: A Theology of Reverence for Life*. Louisville, Ky.: John Knox.
- McFague, Sallie. 1997. *Super, Natural Christians: How We Should Love Nature*. Minneapolis: Fortress.
- Peacocke, Arthur. 1986. *God and the New Biology*. London: J. M. Dent.
- Peters, Ted. 1997. *Playing God: Genetic Determinism and Human Freedom*. New York: Routledge.
- Sober, Elliott, and David Sloan Wilson. 1998. *Unto Others: The Evolution and Psychology of Unselfish Behavior*. Cambridge: Harvard Univ. Press.
- Stenmark, Mikael. 2002. *Scientism: Science, Ethics, and Religion*. Burlington, Vt.: Ashgate.
- Tolkien, J. R. R. 1984. "On Fairy-Stories." In *The Monsters and the Critics and Other Essays*, ed. Christopher Tolkien, 109–61. Boston: Houghton Mifflin.
- Wilson, E. O. 1975. *Sociobiology: The New Synthesis*. Cambridge: Harvard Univ. Press.