

FREEDOM IN THE BODY: THE PHYSICAL, THE CAUSAL, AND THE POSSIBILITY OF CHOICE

by Michael L. Spezio

Abstract. In *Minding God* Gregory Peterson takes a careful look at the kind of freedom that human persons have. He concludes that humans are constrained to be free and unpacks this into a version of compatibilism. That is, humans are not metaphysically free under current existence because of the causal determination inherent in their physical nature, but they can take credit for the origination of self-forming decisions because the causes occur inside of us. Peterson does advocate an eschatological hope looking forward to the breaking of causal determination by God's own action. Thus, *Minding God* presents an eschatologically limited compatibilism. Compatibilism of any kind, however, presents serious challenges to most Christian theologies and to many religious traditions broadly considered. After I interpret Peterson's position I make the argument that compatibilism is neither desirable nor required for a theological anthropology intent on serious engagement of cognitive science.

Keywords: Karl Barth; cognitive science; incompatibilism; William James; neuroscience; relational; subjective.

When a human being decides, is there a possibility of choice or only a complex working out of mechanism, involving only the causal interactions of a physical, embodied self and its permeating, equally physical context? In *Minding God* (2003), a rich engagement of cognitive science¹ from a perspective within Christian theology, Gregory Peterson takes up human freedom as a central theme in the dialogue between Christian theology and cognitive science. Peterson is right to focus on this key issue, since human freedom and its limits are central elements of nearly every Christian theology and of most other major religious traditions as well.

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Peterson concludes that humans are “constrained to be free” (Peterson 2003, 95) and endorses a form of compatibilism,² creating major challenges for any Christian theology and theodicy whose coherence depends on the possibility of human choice.

In what follows I frame an overview of what I interpret to be Peterson’s view of human freedom in *Minding God* and his reasons for holding this view. First I briefly review accounts of human freedom. I then argue that Peterson holds an eschatologically limited compatibilism that accepts and celebrates a fully causally determined human nature, understood in physical terms, but remains committed to the hope of breaking determinism’s hold. Freedom is still to come, in an eschatological age, glimpsed as yet only with the eyes of hope, grounded in a living faith. I argue in response that compatibilism of any kind is neither desirable nor required for serious³ engagement of religion with science. I agree with Peterson that humans are constrained to be free, but we make more progress by exploring meanings of constrained freedom other than compatibilism. Doing so requires recognizing the constraints that our own interests place upon the kinds of answers we find in any given inquiry and recognizing also how limited in scope each one of these interests is. It is these moments of recognition that make possible the moments of freedom we enjoy. Such recognition requires of us a full embrace of human experience in all three “persons” (the subjective I, the relational You, and the distanced She/He) and so is one way in which we are constrained to be free.

Most people agree that human freedom requires the possibility to “select between alternatives without coercion” (Peterson 2003, 75). Decisions can be made under various kinds of compulsion. For a decision to be a choice, though, the deciding agent must be free of compulsion. Compatibilists deny that causal determination of decisions counts as compulsion when that causal determination physically arises within a deciding agent. They thus say that freedom is compatible with a human nature that is causally determined from within. Incompatibilists define any causal determination of a deciding agent as compulsion and say that freedom is incompatible with a human nature that is causally determined.

Note that both compatibilists and incompatibilists affirm that freedom requires an agent to be “ultimately responsible” for and the originator of her decisions (Taylor and Dennett 2002, 257–59, 273; Kane 1998, 60–61). Compatibilists find that affirming ultimate responsibility just is “the knowledge that without our presence, the universe would have turned out significantly different” (Taylor and Dennett 2002, 273). Incompatibilists find that the same may be said for anything that exists, including things not generally viewed as deciding agents, such as volcanoes and rivers. Most compatibilists are convinced that human nature is causally determined. So are some incompatibilists, and these deny that human freedom exists,

although some argue that we must live under the illusion of freedom to live at all morally (Pereboom 2002; Smilansky 2002). Many incompatibilists, however, deny that human nature is causally determined—or deny that we *know* that it is—and attempt to construct accounts of human nature that allow for the possibility of choice, as they understand it. They are motivated by certain compelling elements in human experience: (1) the experience of freedom in the first person (in subjective experience) that is widely shared among human persons and (2) the attribution of freedom to the second person (the relational You), which is based on similar widely shared experiences and which is required for understanding moral agency and responsibility.

Peterson doubts whether metaphysical freedom—decision without causal determination—is possible at all for embodied humans: “In many ways it is the very determinate structure of our brain and biology that determines the kind of freedom we have. This may not get us fully to a metaphysical freedom, but it is at least empirically consistent with it” (Peterson 2003, 97). The “empirical freedom” Peterson affirms “means that the self is not simply a product of its environment but is formed by its own decisions and choices” (p. 97). Here, determinate structure is squared with choices, and we see an affirmation that the kind of freedom that counts is one in which the self originates from its own decisions. This position is textbook compatibilism, and it is one way in which Peterson understands humans as constrained to be free.

Expanding on this view, Peterson understands human freedom as the causally determined complexity and plasticity of human nature. He writes, “The great plasticity of our behavior allows us to act selfishly, to cooperate, and even to cooperate selfishly. Yet our freedom is not complete, and all too often we find ourselves constrained by both biology and culture. . . .” Human capacities for empathy, facial recognition, and other social and relational abilities provide “a degree of freedom.” These capacities are “the particular form of our bondage” that allows us to “have the kind of freedom that we do” (p. 97). Here, Peterson celebrates the wondrous complexity of a thoroughly physical human nature, especially complexity that enables relationship, calls this complexity freedom, and embraces its thoroughly mechanistic, causally determined nature.

Peterson rejects reductionism and any type of eliminative materialism. He ultimately favors an open-system emergent physicalism (2003, 66–69). But open-system emergent physicalism leads to an embrace of scientific causal mechanism just as surely as reductionism does. As Jaegwon Kim makes clear in his recent *Mind in a Physical World* (2000, 120), “To think that one can be a serious physicalist and at the same time enjoy the company of things and phenomena that are nonphysical . . . is an idle dream.” Philip Clayton alludes to this problem in his work (1999, 212)

and stops short of avowing physicalism. An open-system emergent physicalism that affirms only a causally determined human nature, as Peterson's does, entails compatibilism.

Compatibilism is not, however, Peterson's final answer to the problem of human freedom. He affirms a second way in which humans are constrained to be free, in answer to the second of two theological questions about human freedom. While compatibilism answers only the first, philosophical, question, the second asks about what happens when "all possibility of mind will cease," about transcending the "travails of our current existence." It is answered by putting "faith in the claim that God will make such a transformation possible." A "logic of hope" then arises, beyond any science, hope in "a God who minds, both for our future, and for us now." The compatibilism required for our current, determined existence has no place in the eschaton of hope. There, determinism's hold is broken, and we will be truly free. In this way, theology recognizes a freedom that is entirely about "entering a new state of being," about "freedom from sin and the evils of this world" (Peterson 2003, 221).

Peterson's eschatologically limited compatibilism allows theology to enjoy strong coherence with cognitive science while affirming an important role for theology in systematically reinterpreting sacred narrative and tradition within a strongly eschatological framework. Nevertheless, compatibilism raises difficult challenges for most Christian theologies, especially those whose coherence depends on the possibility of human choice, free of any compulsion including causal determination, within the constraints of our current existence.⁴ Thus, compatibilism is not a desired element of theological engagement of cognitive science, at least from the viewpoints of most Christian theologies.

One option Peterson might have used to avoid a compatibilist view is to incorporate quantum physics into his physicalism, specifically the indeterministic interpretation of wave collapse. Indeed, B. Alan Wallace has chided cognitive science for not taking quantum physics more seriously: "To discuss the mind/brain problem today without taking into account the implications of quantum theory is like discussing the movements of the planets without taking into account the Copernican Revolution" (Wallace 2000, 73). Yet Peterson excludes quantum indeterminacy because "there is no credible evidence" supporting a role for it in contemporary cognitive science (2003, 71).

Had Peterson tried to incorporate quantum indeterminacy, his might have been an incompatibilist view similar to the influential view of Robert Kane, who proposes that the "efforts of will" felt by agents making real choices can be described, from a scientific, physical viewpoint, as quantum indeterminacies in the brain amplified by chaotic systems also in the brain (Kane 1998, 128–30). Quantum processes free decisions by agents from causal determination. As examples, Kane describes a businesswoman late

for a crucial meeting who is rushing along and happens to be the only person to see a mugging underway in an alley; and an engineer who is an alcoholic and trying to rehabilitate his marriage, working late one night and tempted to have a drink. These persons are torn by the decisions facing them. Kane suggests that the tension up to and including the moment of choice is equally explicable in terms of subjective experience and quantum chaos in the brain. Kane is not a mind/body substance dualist, but neither is he a physicalist, since “the explanatory roles currently played by desires and beliefs, processes of reasoning, efforts, choices and distinctions between mental *actions* and mere happenings” are required “in the final accounting if free will is to survive” (Kane 1998, 147). In this way, Kane argues, quantum physics allows an account of human decision making that is free of causal determination and so allows for incompatibilism *and* the possibility of human freedom within a scientifically coherent world-view.

Nevertheless, Peterson is on solid (cognitive) scientific ground in doubting whether quantum events in the brain could be used to support causal indeterminacy. For one thing, Peterson recognizes, as Kane does not, that there are wholly deterministic accounts of quantum action at the macroscopic level that have not yet been ruled out (Albert 1992, 134–79; Greene 2004, 206–8). More important, Peterson also recognizes that contemporary quantum physics includes the relatively recently developed concept of quantum decoherence,⁵ which severely curtails quantum strangeness at the macroscopic level (Peterson 2003, 68). Decoherence in the brain takes place on the time scale of 10^{-20} to 10^{-13} seconds (Tegmark 2000), faster than the gating of a single ion channel in the cell membrane ($\sim 10^{-13}$ seconds to 10^{-9} seconds) (Beckstein et al. 2003; Liebovitch and Krekora 2002) and much faster than the duration of a single action potential ($\sim 10^{-3}$ seconds). Although decoherence time scales are consistent with the view that *God* acts at the level of quantum indeterminacy (Russell 1998), the idea that finite *human* agents deliberate and choose at those scales is difficult to maintain.

Having seen that quantum physics offers slight hope to incompatibilists seeking support for the possibility of choice, we now ask whether there is an incompatibilist view that still allows theology to seriously engage cognitive science. Before answering in the affirmative, two central motifs that energize Peterson’s theological engagement of cognitive science need to be considered, because they are both very important in any engagement of cognitive science by theology on the question of human nature. These elements are (1) conceptual coherence and (2) an ecological ethic demanding that humans be seen in ultimate connection with (nonhuman) nature and never separated from it. Both commitments lead Peterson to give cognitive science primary status in saying what human nature is and is not under current existence, which results in his empirically limited compatibilism.

For Peterson, the ideal scientific theology is a “rational enterprise” (2003, 15), because rationality is required for theology to “make claims about the world” (p. 16) without which theology is irrelevant. Rationality here is understood as Western scientific logic, with great value placed on coherence and parsimony. Ideal theologies are coherent and conservative systems of propositions and arguments, and the best among them seek the most coherence with the most accepted theories of cognitive science. Taking cognitive science seriously means constructing theologies that maximize coherence with contemporary cognitive science (p. 17). Peterson stops well short of endorsing an eventual synthesis of theology and cognitive science. Instead, incoherence will and probably must remain, despite the best efforts of those seeking to maximize it.

Granting the wondrous complexity of human-within-nonhuman nature, Peterson combines humility with a desire for new knowledge, saying that “the story of human nature . . . is incomplete both scientifically and theologically” (pp. 72–73). At the same time, he asserts that cognitive science can “explain on a naturalistic basis most, if not all, the functions of mind” and that there is “nearly incontrovertible” evidence that human subjective experience or consciousness emerges “naturally as the result of biological development” (p. 71). While “a strictly biological account of human nature must necessarily be incomplete” (p. 175), and while “cognitive science still offers only a rudimentary guide at best” to understanding human consciousness (p. 71), there is a strong tendency in Peterson’s account to grant cognitive science the last word, or nearly so, in accounts of human nature. He goes so far as to recommend that anyone “outside of scientific research” maintain “a prudent agnosticism about the ultimate nature of consciousness” (p. 71).

Why this emphasis of science over all other forms of inquiry? One reason is the coherence-maximization function of an ideal, scientific theology. But the drive for coherence with cognitive science is motivated by a desire to counter theologies that cleave human nature in two. Not only do dualistic theologies generally lead to “the result that the mental becomes completely separate from the physical and therefore completely abstracted from the science as well” (p. 64); Christian dualism also privileges the mental, or soulful, aspect of human nature, devaluing human embodiment and nonhuman nature along with it. For Peterson, dualism leads to the bizarre claim that humans are “alone in an otherwise silent cosmos” and obscures the truth of a world that “places us amidst a plethora of intelligent and passionate creatures,” a world that “the cognitive sciences are revealing to us” (p. 150). Peterson’s ecologically ethical focus is a welcome one and motivates his desire for coherence between theology and cognitive science.

Both commitments discussed here—to conceptual coherence and to an ecological ethic—arise, at least implicitly, whenever theology engages

cognitive science on questions of human nature. In developing an incompatibilism that advocates *for* the possibility of choice at the same time as it engages cognitive science seriously, both commitments need careful consideration.

Conceptual coherence, understood as holding propositions that cohere by the standards of Western logic, is a highly prized virtue in scholarship, requiring enormous effort to maintain as experience enriches and nuances understanding. Often, coherence acts as a locked gate, keeping out those experiences and the ideas they inspire that do not cohere with the established consensus of the gatekeepers but that are nonetheless compelling on other grounds. Alternatively, coherence can be wielded like a machete, hastily cutting through a diverse rain forest of compelling experiences on the way to some predetermined destination called reality. Certainly, variations on this understanding of the uses of coherence inform philosophies of science, from explaining the necessity of scientific “revolutions” (Kuhn [1962] 1970) to understanding the “hard core” of scientific theories in the methodology of scientific research programs (Lakatos 1978). If commitments to coherence can both obstruct as well as facilitate scientific progress, it is obvious that coherence can play both roles in theological engagement of science as well. Thus, requirements for coherence in the engagement of cognitive science by theology may need to be relaxed somewhat in order not to lose sight of that which is most compelling within human experience.

One obstacle to relaxing coherence requirements enough to carefully consider unexpected experiences is the conviction that incoherence entails incompatibility. Engagement between incompatible views entails perpetual conflict, and this is never the goal of serious engagement of science by theology. But incoherence does not in fact entail incompatibility. Two views, two explanations, may not cohere and be perfectly compatible precisely because they function in different contexts and have different aims. Examples from within science include the Brønsted-Lowry and Lewis theories of acids and bases in chemistry, particle/wave duality of matter in physics, and single-unit and distributed-network theories of neural coding in neuroscience. In these examples, each view functions very well in defined contexts, and there is no question of incompatibility due to incoherence.

Moreover, strict adherence to coherence becomes problematic as soon as one allows any distance between one’s concepts and the reality they purport to describe. Only when one expects one’s concepts—including concepts of Western logic—to perfectly capture reality can one, assuming a unified reality, expect perfect conceptual coherence. Such would be the position of a naive realist who is committed to coherence. Because naive realism is not desired or required for serious engagement of cognitive science by theology, neither is the expectation of perfect conceptual coherence (i.e., synthesis) between science and theology. It is true that most people prefer conceptual coherence to incoherence, and it is likely that this

preference inclines toward misuses of coherence. Imre Lakatos, who accepted that “Kant undid the notion that for a proposition to be true it must represent something else” (Hacking 1979, 385, quoted in Larvor 1998, 62), was often frustrated “at having to explain [such] philosophical ‘commonplaces’ to his distinguished colleagues” (Larvor 1998, 64). Theologians often share Lakatos’s predicament with regard to their distinguished scientific colleagues, who more often than not espouse some form of materialism which they have not critically examined. And theologians who desire serious engagement not just with science but with practicing scientists may be inclined to put off epistemological tutoring of their scientific colleagues, when needed, out of a desire to be collegial and dialogical and to avoid giving offense. Theologians also must know, however, that one of the greatest contributions they can make in engaging science is to educate practicing scientists regarding philosophical approaches to science and to knowledge broadly considered. Another is to uphold and articulate the significance of compelling human (religious) experiences that otherwise would be dismissed by various scientifically determined worldviews.

Undoubtedly, it was collegiality and the desire for respectful dialogue that led to Peterson’s saying that cognitive science has already explained most functions of mind and that those who do not do scientific research should stay out of conversations regarding the nature of human consciousness. It is not clear how much this collegial respect of cognitive science influenced, via coherence maximization, the development of his eschatologically limited compatibilism. As for the first assertion, most senior neuroscientists would say that we have not scratched the surface of brain function and would point as evidence to the fact that there is no grand theory of the neural basis of thought and behavior.⁶ As for whether those outside of scientific research can make contributions to understanding human consciousness, this would seem to be the motivation for including philosophy of mind as a branch of cognitive science, not to mention experts in meditation and phenomenological reflection, which is being done in neuroscientific studies of consciousness.

Peterson’s second commitment is to an ecological ethic radically connecting human with nonhuman nature. This commitment must be upheld, because Peterson argues convincingly that theologies stressing the mental, or the soulful, as separate from embodiment will not be able to seriously engage cognitive science. Moreover, theologies rejecting embodiment as essential to human nature cannot seriously engage with any science, in particular ecology and evolutionary biology. And, as Peterson makes clear, Christian sacred narrative does not support the disembodiment of human nature, something overlooked by much of Christian tradition. Finally, because theology always implies a theological ethic, it is unlikely, given the witness of greening movements within Christianity, that most Christian theologians would want to continue espousing a radical

separation between human and nonhuman nature, with all that would mean for Christian ecological ethics.

Now we can return to the question of whether there is an incompatibilist view of human freedom that argues for the possibility of choice while being able to seriously engage cognitive science and affirm the radical embodiment of human nature. I propose that the answer is yes, and in the rest of this essay I attempt to sketch elements of such a view. An expanded account of this view is under development (Spezio forthcoming). In brief, this view draws upon David Lamberth's interpretation of William James's radical empiricism (Lamberth 1999) and advocates serious encounter of humanity in three persons (I, You, She/He), with three conceptual perspectives that are shaped by the circumstances of concrete experiences. Because this view does not give primacy to third-person accounts of human nature independent of the context of inquiry, it refrains from endorsing causation as the only or the best kind of explanation, again independent of the context of inquiry. Under this view, reasons do not require causes, and human embodiment is strongly affirmed, but the body is not understood only or mainly as a physical object.

The point of departure for this view is James's recognition of the limits of conceptual logic and the detrimental effects that arise "when it is exclusively extended to the whole philosophical enterprise, and thus made prescriptive of the whole of reality" (Lamberth 1999, 183). Any kind of conceptualization temporarily, albeit incompletely, isolates a part of the agent's experience as a whole. Isolation—the agent's focus—is strongly influenced by the agent's interests at the time. This suggests that conceptual coherence should not be granted absolute primacy in constructing understandings of human nature, as already discussed. Once James internalized this view he could espouse a real difference between human concepts of the physical and the experiences that gave rise to them. Lamberth states this view as holding that "experience as a whole consists of an experiential system one part of which also forms a physical system" (1999, 190–91). The other part is generally described as a mental system, but the two conceptual systems should not be reified as substances, nor should one be given priority over the other independent of context and interests. Indeed, even together they should not be expected to describe reality (for James, "experience") as it really is. Of course, for James, experience gives "direct acquaintance" with reality, since the reality is pure experience (Lamberth 1999, 182–83). Certainly, conceptualization and exercise of interest by an agent must affect that agent's subsequent experience. It is thus difficult to understand what James meant by "direct acquaintance." But one need not endorse direct acquaintance in order to appreciate what James is doing here. One may instead simply recognize that human finitude and the limitations due to the kinds of bodies we have and the varieties of interests

we exercise constrain the kinds of experiences and thus the forms of knowledge we can have. Still, the experiences are prior to and are given priority over the conceptual systems we use to reflect upon them.

But experiences of human nature come in a variety of contexts and from within three overarching, conditioning perspectives: the subjective I, the relational You, and the distanced She/He. To allow experience to inform our conceptual systems—and to avoid shutting out or cutting away compelling experiences, such as subjective experiences of freedom, because of conceptual limits—we do well to focus on humanity in three persons. Of course, this tripartite conceptualization of human experience is just an abstraction, and of course which perspective is accorded primacy will depend upon the permeating context and the interests of the inquiring agent(s). Yet the tripartite schema can help frame inquiry into compelling experiences so that they are given the serious consideration they deserve. Most mainstream neuroscience and much cognitive science recognize first- and third-person experience of human nature, give ultimacy to third-person accounts, and leave out the key second-person perspective altogether (Debiec and LeDoux 2003). Third-person accounts are then called physical accounts of human nature, with all of the causal determination thereby implied. This was alluded to earlier in the discussion of Peterson's compatibilism.

It bears saying that third-person (i.e., scientific) accounts of human nature are absolutely desired and required within certain contexts and in view of specific interests of inquiry. Within these contexts and in view of these interests, cognitive science must have primacy, and of course it generally does without much question. Causal accounts of human nature are legitimate in these situations, since they are defined in such a way as to bracket, or temporarily suspend inquiry into, first- and second-person experiences. The experimenters bracket their first- and second-person experiences, and the experiments generally do not inquire after the first- and second-person experiences of experimental subjects. This method is responsible for the tremendous progress in cognitive science to date, and there is nothing in the tripartite view of human experience to challenge its validity. Indeed, cognitive science should be encouraged to develop to the fullest possible extent a third-person account of human nature. The one caution is that science should not then turn around and dismiss compelling first- and second-person experiences not included in its conceptual schema. A theology that views humanity in three persons can thus seriously engage cognitive neuroscience on questions of human nature.

Does this tripartite view then allow an incompatibilist to support the possibility of choice? Yes, because this view frees human nature from ultimate causal determination, independent of context and interests, and affirms the efficacy of deciding for reasons. Causal determination of human nature is incoherent with many first- and some second-person experiences

of human freedom and with the interests of moral agency. Causal determination emerges out of a conceptual system based in third-person experiences that result from carefully managed situations and intensely focused interests in specialized inquiry. Thus, extreme care must be taken when attempting to apply causal determination—and any scientific notion of the “physical” entailing causal determination—to situations not constrained by the context and interests of scientific experimentation.

Where does this leave human embodiment? If the body is not physical, what is it? Or is the view here just another version of idealism? First, recognize that human embodiment does not entail that the body is simply a physical object wholly describable by a scientific account. Instead, embodiment includes notions of human sensuality, emotionality, movement, desire, and feeling. It is not restricted to the idea of the body as an animate machine or piece of meat, for example (Pinker 1997, 96). Saying that the body is *physical* is fine if this term is used as a descriptor that does not restrict understanding to scientific physicality. Nor should the physicality of the body be taken to imply the disembodiment of the nonphysical human mind or soul. The human embodiment required of the incompatibilist view articulated here, which affirms a radical connection between human and nonhuman nature, affirms also that human persons have no possibility apart from or except for human bodies.

Of course, this entails that humans are indeed constrained to be free, such that the way human nature is means that some choices will lead in directions that prevent or severely restrict any subsequent possibility of choice. Choosing to use heroin once, for example, may prevent any possibility of choice against using heroin in the future, in the absence of medical intervention.

Is there a possible Christian theology that affirms human embodiment while viewing human nature in three persons and at the same time is capable of serious engagement with cognitive science? This question opens up exciting possibilities for research programs of various kinds, drawing on sacred narrative and tradition while genuinely seeking information from and engagement with cognitive science. Indeed, there is one Christian theological account of human nature within recent tradition that has a number of the elements described here: a view of the human in three persons, a commitment to metaphysical freedom, a strong affirmation of human embodiment, and a respectful view of science. I am describing the theological anthropology of Karl Barth, as expressed in his *Church Dogmatics* (Barth 1960, 222–436).

Barth often is characterized as a soul/body substance dualist, but this is the result of misinterpretation of his views and of his failure to always be clear in his language. Barth denies human disembodiment but is aware of the influence that it has had on Christian tradition: “We necessarily contradict the abstractly dualistic conception which so far we have summarily

called Greek, but which unfortunately must also be described as the traditional view. According to this view, soul and body are indeed connected, even essentially and necessarily united, but only as two 'parts' of human nature" (Barth 1960, 380). He also eschews materialism: "We obviously do not see man if we will not see that, as he is wholly his body, he is also wholly his soul, which is the subject, the life of this body of his" (1960, 383). Barth identifies human subjectivity with the soul and gives primacy to this subjectivity, but the soul is not for him a separate substance or even a separate part of human nature. Although Barth's language is not always as careful about this as one might wish, and he does express some sympathy for substance dualism, he nevertheless finally weighs in against both the parallelism of Gustav Fechner, Wilhelm Wundt, and others and the interactionism of Hans Driesch and Heinrich Rickert. Barth accuses these accounts of human nature of talking only about "the soul and body of a ghost and not of real man" and instead holds that body and soul are "two moments of the one human activity" and that "man himself as soul of his body is subject and object, active and passive" (1960, 429). Barth is no dualist and is committed to a human embodiment that is no mere materialism but radically connected to nonhuman nature, affirming that nonhuman animals have spirit and the possibility that nonhuman animals are also "souls of their bodies" (1960, 395).

Much more work needs to be done to unpack what has been said here and to develop it into a coherent theological account of human nature. Such an account will draw on James, on Barth, on other theological anthropologies including Peterson's, and on contemporary cognitive science. Key questions will involve how one can recognize and use appropriately the first-, second-, and third-person perspectives, being sensitive to contexts, interests, and the limitations they bring with them. It is likely that cultivating awareness of shifting contexts and limited interests will increase possibilities for choice, for a lack of this awareness leads to automaticity (or habit) and unexamined decision making. A great deal of work is also ahead in order to persuade practicing cognitive scientists that such a view does not invalidate their scientific practice or their claim to epistemological primacy within defined contexts and according to specified interests. Working out how this is so will require attentiveness in dialogue and a dedication to human experience in all of its compelling detail. It also will necessitate a close consideration of the ways in which humans are in fact constrained—by biology, by culture, by finitude—to be free. Peterson's emphasis on and treatment of this important issue in *Minding God* is a solid contribution to this endeavor.

NOTES

1. Cognitive science combines approaches from psychology, biology, computer science, philosophy, and anthropology to understand the human mind and behavior.
2. Compatibilism holds that all meaningful forms of human freedom are compatible with causal determination of human nature.
3. The use of the term *serious* is shorthand for “respectful, careful, critical, and dialogical.”
4. There is a discussion of the difficulties that compatibilism raises for mainstream Christian theodicies in Spezio 1999.
5. Decoherence states that “environmental influence suppresses quantum interference and thereby turns quantum probabilities into familiar classical ones” (Greene 2004, 514 n15).
6. I have been told by several neuroscientists at the top of their field that neuroscience still knows very little, comparatively, about the human brain, let alone about how the brain relates to thought and behavior.

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