CHRISTIAN AND BUDDHIST PERSPECTIVES ON NEUROPSYCHOLOGY AND THE HUMAN PERSON: *PNEUMA* AND *PRATITYASAMUTPADA*

by Amos Yong

Abstract. Recent discussions of the mind-brain and the soul-body problems have been both advanced and complexified by the cognitive sciences. I focus explicitly here on emergence, supervenience, and nonreductive physicalist theories of human personhood in light of recent advances in the Christian-Buddhist dialogue. While traditional self and no-self views pitted Christianity versus Buddhism versus science, I show how the nonreductive physicalist proposal regarding human personhood emerging from the neuroscientific enterprise both contributes to and is enriched by the Christian concept of *pneuma* (spirit) and the Buddhist concept of *pratityasamutpada* (codependent origination).

Keywords: Christian-Buddhist dialogue; codependent origination; emergence; nonreductive physicalism; spirit; supervenience.

In his recent book *Minding God* Gregory Peterson provides an introductory overview to the dialogue between theology and the cognitive sciences. His central thesis is that "serious consideration of the cognitive sciences stands to affect nearly every facet of Christian theological thinking. . . . Insofar as methodology and content are connected, the content of the cognitive sciences can affect the way we go about *doing* theology" (Peterson 2003, 12). This is not only because the cognitive sciences illuminate the theorizing (and thus theologizing) processes of human thinking but also because they provide data for the various theological loci. While Peterson touches upon a wide range of issues, my interests lie in his summary of the

Amos Yong is Associate Professor of Theology, Bethel University, 3900 Bethel Drive, St. Paul, MN, 55112; e-mail a-yong@bethel.edu.

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implications of the cognitive sciences for understanding human consciousness and the mind-body relation.

The mind-body (or mind-brain, or soul-body) problem has persisted for centuries. Various dualisms and monisms have explored how they are related and interact. Dualistic conceptualizations—whether supernaturalist, interactionist, Aristotelian-Thomist, or Cartesian—are increasingly suspect but provide some explanation for intentionality, the emotions, and top-down/mental causation more difficult to come by otherwise. On the other side, monistic solutions are divided roughly between idealist and physicalist accounts. What is gained by the former seems also to be preserved in dualist construals, and the increasing unpopularity of these accounts renders idealist or mentalist views suspect as well. The physicalist response, however, features some hard-core naturalistic or eliminative materialistic views unacceptable to most in the world of the religions.

Peterson's survey introduces developments in physicalist explanations, especially those exploring functional accounts of consciousness as a kind of information processing, dependent upon the brain. Whereas this can be understood in terms of a reductionistic model of consciousness as no more than brain processes (e.g., eliminative materialism or physicalism), it also has led some to opt for an emergentist explanation of mind as supervenient upon the complex configurations of the brain and its states, and featuring mental properties irreducible to the properties of their physical parts (nonreductive physicalism). The attractiveness of this view for Christian theologians in dialogue with the cognitive sciences is not only that it emphasizes with reductionist models the essential role of the brain but also that it connects recent trends interpreting biblical anthropology that emphasize the unity of the whole person with a practically axiomatic idea in the neuroscientific community regarding human personhood as embodied. The concept of supervenience has been introduced in this regard to preserve the distinctiveness of mental properties vis-à-vis brain properties (and, by implication, those of the soul from those of the body as well).

Peterson is careful to identify the many questions that remain for functionalist and emergentist construals of consciousness, including those related to the nature of personal identity and those concerning the relationship between mind and body. What is overlooked are challenges posed to theological accounts of human consciousness and personhood derived from other faith traditions. Peterson realizes that "any dialogue between theology and cognitive science should be cognizant not only of theological pluralism but of religious pluralism as well" and thus suggests the timeliness of a "'trialogue' among religious traditions on the matters of science, as each works through issues of borders, compatibility, and interpretation" (Peterson 2003, 13). Yet, he proceeds to zero in only on the dialogue between Christian theology and the cognitive sciences.[1]

Rather than advancing this discussion at the level of the cognitive sciences, I explore the viability of the basic framework of emergentism with regard to the interreligious encounter. More specifically, I make connections between emergentism and recent developments in the Christian-Buddhist dialogue that have shown promise for overcoming the traditional polemics between self and no-self views. During the past generation, the category of *pneuma* (spirit) on the Christian side has come into renewed focus, and the notion of *pratityasamutpada* (codependent origination) from the Buddhist side has gained increasing attention. What do these concepts have to do with emergentism?

In what follows, I suggest that *pneuma* services dialogue not only with Buddhism but also with the cognitive sciences. It provides a relational framework to reconceive the mind-brain and soul-body relationship on the one side, even while recognizing the larger social and environmental constitution of the human person on the other. *Spirit* is best understood as an emergent reality, dependent upon but not finally reducible to the brain and the body. It also preserves the distinctively Christian conviction of the human being's relationship with the Divine.

I also suggest that *pratityasamutpada* provides the kind of nondual perspective from the Buddhist tradition that services dialogue with both Christianity and the cognitive sciences. It provides a similarly orienting relational framework to reconceive mind-brain and soul-body interactions within the various contexts in which they occur. Human selfhood is best understood as an emergent reality, dependent upon (at least) the *skandhas* (the "five aggregates") at the microscopic level and the broader social and ecological environments at the macroscopic levels. At the same time, the distinctively Buddhist notion of the true self as finally empty is preserved not only in order to retain this nonnegotiable soteriological conviction but also in order to illuminate its dialogues with Christianity and the cognitive sciences. The concluding section summarizes the discussion in the form of suggestions for further inquiry.

Pneuma, Neuroscience, and Theological Anthropology

The following discussion seeks to move from exegetical through neuroscientific perspectives on human personhood toward an outline of a theological, pneumatological, and scientific anthropology. At the same time, it is clear that these moments can be separated from each other only in a very artificial sense given that thought and theologizing are always caught up within the hermeneutical circle. Keep in mind, then, that each moment is therefore already implicated by considerations derived from the other two.

The Emergence of the Human: Exegetical Considerations. The relevant texts concerning the creation of *ha adam* in the creation narrative are Genesis 1:26–31 and 2:7.

1:26 Then God said, "Let us make humankind in our image, according to our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the wild animals of the earth, and over every creeping thing that creeps upon the earth."
27 So God created humankind in his image,
in the image of God he created them;
male and female he created them.
28 God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth." 29 God said, "See, I have given you every plant yielding seed that is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food. 30 And to every beast of the earth, and to every bird of the air, and to everything that creeps on the earth, everything that has the breath of life I have given every green plant for food." And it was so. 31 God saw everything that he had made, and indeed, it was very good. And there was evening and there was morning, the sixth day.
2:7 then the LORD God formed man from the dust of the ground, and breathed into his nostrils the breath of life; and the man became a living being. (NRSV)

A few observations are in order. First, a pneumatological rereading of the creation narratives in general and of human beings in particular is justified given the primordial movement of the *ruah Elohim* (breath or wind of God) over the waters (Genesis 1:2) and the culminating creative work of Yahweh in giving the breath of life to *ha adam* (2:7). At the same time, it is important to emphasize that in the latter Jahwist account, *ha adam* is also formed out of and thereby emergent from the dust of the ground. Together, then, *ha adam* is a unity of dust and breath. When understood within a canonical framework—for example, Job 34:14–15; Ecclesiastes 12:7; Psalm 104:28–29; Ezekiel 37:1–14; Luke 23:46; Romans 8:11, 18–23—a combined reading of the Priestly and Jahwist creation accounts[2] sustains a robust pneumatological understanding of what it means to be human that includes a material and bodily dimension.

Second, human beings are created in relation to God, in the divine image and likeness. As such, humans are capable of being both blessed and addressed by God. To be blessed is to receive the divine favor. To be addressed is to have one's response elicited and to imply the capacity to take responsibility and to be under obligation. Although the fish of the sea and the birds of the air are blessed and commanded to be fruitful and multiply (1:22), human beings are given further instructions regarding subduing and caring for the earth. In this sense, human beings represent the unfinished dimension of the creation, with the potential to either fulfill or sabotage the divine intentions. It is noteworthy that the sentence "And it was so" does not follow the creation of *ha adam* as it does elsewhere (Genesis 1:7, 9, 11, 15, 24, 30), implying the openendedness rather than definiteness of the human way to be (Sacks 1980, 38–39). This ambiguous nature of what it means to be human may be the reason why God does not specifically see and immediately pronounce the creation of *ha adam* as good, as God had done with the work of days 3 through 6 (see Strauss

1981, 18–19). The later narrative of the "fall" (Genesis 3) reflects human freedom exercised *against*, rather than in harmony with, the nature of things, thereby breaking the relationships of human beings with God, creation, and one another.

Third, *ha adam* is created as a relational being, representing the divine image and likeness. Of course, the divine relationality in the creation narratives derives not from the allegedly proto-trinitarian "Let *us* make . . ." (1:26; emphasis added) but from the God-world and God-humankind relationships. More specifically, the divine image is revealed in the creation of *ha adam* as male and female. Here, the testimony of the later biblical traditions that the Spirit makes present the divine love within human hearts (Romans 5:5) and replicates the fellowship of the Triune God amidst the people of God (2 Corinthians 13:13) fills out the pneumatological content of *ha adam* given the breath of life to embrace each other as well as the Creator. Of course, human relationality does not stop with God and human beings. Rather, as a close reading of Genesis 1:26b–30 reveals, the sexual differentiation of *ha adam* points both to interpersonal sociality and to intercreaturely relationality. *Ha adam* as male and female are told not only to multiply and fill the earth but also to subdue and care for the created order (Welker 1999, 64–69).[3] This clear relationship between human beings, the animals, and the earth itself, not to mention the formation of *ha adam* from the dust of the ground, reflects the symbiotic, ecological, and interrelational character of what it means to be human.

Finally, a few comments should be made regarding the human constitution in anticipation of the discussion to follow. The traditional reading of Genesis 2:7 through the lenses of a Platonic and a neo-Platonic soul-body framework has noted (and emphasized) the duality of human beings as dust of the ground and breath of God. In light of the preceding comments, the Priestly perspective of human constitution is explicated in terms of the webs of relations—divine-human, human-human, human-animals, human-earth, and so on—through which human beings are constituted. Claus Westermann's conclusion is apropos: "The person as a living being is to be understood as a whole and any idea that one is made up of body and soul is ruled out" (1984, 207). More important, it is also consistent with contemporary perspectives that are going beyond traditional (Platonist and, especially, Cartesian) dualist definitions of humans as "disembodied souls" toward ontological wholist understandings of human beings as emergent (from the dust of the ground), interpersonal (*ha adam* as male and female), and cosmologically situated (interwoven with the fabric of creation itself) beings (e.g., Green 1998).

Spirit, Mind, Body: The Neurosciences and Philosophy of Mind. It is precisely here that I want to make connections with supervenience proposals regarding the mind-body relationship as introduced by Peterson. A

supervenience theory of mind provides an account of consciousness that is emergent from, intimately connected with, and dependent on but finally irreducible to the material workings of the brain, even while providing a viable model for understanding the phenomena of mental causation.[4] Set within a pneumatological framework, a supervenience theory of mind is transformed into a relational and systems theory of minds and bodies in interdependence with each other and with nature's processes.

Let me explain in three steps. First, the contemporary neurosciences have certainly shown that mental activities are emergent from and in that sense dependent upon brain and bodily functions. This includes, necessarily, the emotive and affective dimensions of the body (Lakoff and Johnson 1999; Damasio 1994; Wainwright 1995). Peterson summarizes various studies that show how damage to different parts of the brain inhibit and in some cases destroy mental functioning (2003, 77–85). Philip Clayton correctly observes that results from the cognitive sciences "present a clear challenge to those who would rend thought and affect from its physical substratum. The influences are both deep and bidirectional; they involve the deepest areas of mental functioning" (Clayton 1999, 184; cf. Jeeves 1993, chap. 3). In this framework, the dust of the ground could be understood to be the essential "hardware" of human personhood.

Second, it is also the case that humans are living beings, dust enspirited and enlivened by the divine breath. Living beings, however, are defined biologically by the properties of reproduction, adaptive capacity, irritability, mobility, and nutrition (including ingestion, digestion, absorption, transport, metabolism, exchange of gases, excretion). Undeniably, "Living organisms are radically new systems of physical entities which are more complex and obey other laws than inanimate objects" (Seifert 1996, 347). The difference, I suggest, is that the exchange of "information" proceeds in not only one direction but multiple directions. So molecular biologists are beginning to point out that natural selection fails to explain the evolutionary process in its entirety insofar as it relies on a mechanistic and deterministic model of causality. Rather, spontaneous, self-ordering systems and natural selection work together, the former permitting, enabling, and limiting the latter, while the latter molds the former, resulting in emergent wholes of complexity.[5] More specifically, it is now being confirmed that while DNA structures certainly transfer information needed for protein formation (in effect, the trajectory of bottom-up causation), the role of the environment in "switching on" genetic activity leading to the development and growth of bodily organs, for example, cannot be ignored ("top-down" causation) (Barbour 2002, chaps. 2, 3). Clearly, the information continuously being exchanged at the molecular and neurological levels is coded to engage what goes on in the higher-level systems of the organism and the environment, and vice versa.

So, if the problematic question is why subvenient properties of the brain do not finally govern supervenient properties of mental states, the response is that supervenient properties participate in higher-order networks and therefore have functions that include the provision of environmental feedback to the subvenient levels. As such, intellectual or mental states receive information from lower (including neural brain) orders but at the same time function to exert top-down influence on the brain and body through the feedback loops, thereby even "reshaping . . . the agent's neural pathways" (Murphy 2002, 384). Peterson clarifies: "These top-down influences are not causes in the literal sense and do not contradict the causal laws of physics but should be understood as a 'downward' flow of information or as a 'structuring cause' that constrains the behavior of any local event or, in the case of the brain, local groups of neurons" (2003, 63).

Herein lies the dynamism of the God-world relationship understood in pneumatological perspective. At the microlevel of neural transmission, a quantum mechanical model of mind, which understands the synaptical firing of electrochemical pulses to be indeterminate, opens up the possibilities of both mental and agent causation.[6] Electrochemical indeterminacies are the "loops" through which mind could be seen to influence the material world. If this is the case, does it not open the door also to the possibility of divine causation or influence through the Spirit's interaction with the human spirit? At the macrolevel of the human person, it would explain, at least in part, why humans are signified not only by organic bodies but also in and through the powers of self-determination, teleological direction, dynamic self-engendering, and the capacity to overcome entropic processes.[7] These are emergent features of human beings as whole or spiritual systems exhibiting both neurobiological and mental causation, and in that sense resisting reductionistic explanations. I suggest that the micro- and macrolevel analyses correlate with the subvenient (brain) and supervenient (mind) processes that together combine to account for the unity of human experience.

But, third, human beings as mental agents interact both with their natural environments and with each other. The former is significant in that it opens up to a field theory of consciousness that locates the knowing individual simultaneously as subject and object within his or her environments.[8] William Hasker suggests, analogically, that "as a magnet generates its magnetic field, so the brain generates its field of consciousness" (1999, 190). Herein we discover a thoroughgoing and dynamic continuity between perceptions and perceived, between sensations and sensed, between mind and nature, between memories and experience, between attention and judgment. Of course, we pick out certain things in paying attention from a wider field, and our judgments of these things are also selective. Thus, the field of consciousness points to the flux of ourselves-in-the-world and calls attention to the "public domain" of the self.

Further, however, the idea of human beings as mental agents interacting with one another can be explicated in terms of a field theory of intersubjectivity that locates the knowing individual as an interpersonal and social being. To have focused almost exclusively only on the mind-brain problematic is to deal with only half the problem. This is because this level of brain science tells us practically nothing regarding the relationship of mind and other minds. If "mind is created as a kind of social practice" (Brothers 2001, 75; cf. Gregersen 2000; Teske 2000), then we need research in neuropsychosociology that will enable us to talk not only about bottom-up causation but also about horizontal or social mental causation. This will raise questions regarding corporate identity and questions of a theological and pneumatological nature, which converge most explicitly in ecclesiology, the doctrine of the church.

My point is that the concept of supervenience provides a holistic theory of mind that connects with a pneumatological understanding of human personhood. The value of the pneumatological approach being developed here is that it resists the various dichotomies—top-down versus bottom-up, mental versus physical, self versus other—precisely because of the relationality intrinsic to the theological category. As such, it provides an explanatory framework for both the mind-mind and the mind-body relationship that enables (rather than demands) engagement with contemporary discussions in the cognitive sciences and in philosophy of mind.

Spirit and Contemporary Theological Anthropology. To summarize the preceding, I am suggesting a pneumatological and field theory of organization, relationality, and transcendence. First, human beings are emergent fields of self-organization concentrated as individual persons. By self-organization I mean wholes whose properties are greater than the sum of their parts, structuring the relationships between the parts even while being dependent upon those parts. So, human mental processes can be understood as a self-organizing field of activity through which embodied persons interact with their environment. The human mind is in this sense not only supervenient upon the brain but arguably supervenient upon the processes of the entire body. As such, the mind is embodied, receiving input from the body's subsystems—physiological, emotional, affective—through the neural transmitters of the brain. But each subsystem or dimension retains its irreducible particularity, organized according to its own distinctive features, functions, and fields of activity. Each also contributes something essential to the whole such that loss of any one dimension results in the malfunctioning of the whole. In this way, each is related to and also partly constitutive of the emergent and self-organizing field of mind. Yet the whole is more or less an integrated reality rather than simply a plurality of accumulated parts.

A pneumatological cosmology and ontology provides not only for the self-organization of creaturely realities but also for what I call their self-

relational character. The Spirit both constitutes the divine presence, and hence relates God and the world, and gifts creation with its relational structures. Humans are conscious beings rooted in a corporeal way amid the concreteness and specificity of the perceptual world. In other words, the embodied mind is primordially anchored in the world and also informed by its responses to the world's solicitations. For this reason, human beings are best characterized as interrelational and "intersubjective fields of presences and presencing" (Langer 1989, 166).

More explicitly, my suggestion is that humans are interrelational and intersubjective beings perhaps because they are spiritual beings. Here, the pneumatological model opens up to and draws inspiration from the trinitarian life of God. The Spirit not only participates in the eternal perichoretic dance of the divine life but is also the bond of love between the Father and the Son. Similarly, human beings are relationally constituted.[9] As enspirited (given life through the breath of God), human persons achieve full potential only in and through interactive and intersubjective relationship and participation with other creaturely fields—of conscious persons (whether differentiated sexually or structured communally), of animals (their naming in the creation narrative), and of nature (the command to care for the earth). But the Spirit's openness to the world produces an "open space" wherein all creatures, not just human beings, find themselves precisely as becoming-in-relationship. A pneumatologically configured world is thoroughly relational, a perichoretic confluence of self-organizing fields of activity that nevertheless participate with each other in composing a creaturely response to God's "letting be."

Creaturely openendedness to other creatures is suggestive not only of the self-relational character of things in the world and the world as a whole but also of the self-transcending aspect of such interactivity and intersubjectivity. The mark of self-transcendence signals first the emergent, transformative, and transforming nature of self-organizing and self-relating creatures, so the relational inputs coming from various directions enable the emergence of novelty. When this happens, creaturely self-transcendence occurs. This is also the case with human self-transcendence. Such self-transcendence is most dramatically engaged when human persons encounter the Divine. This is possible, of course, because the gift of divine *ruah* to human beings is the presence and activity of the Spirit that makes possible human relationship with God. The Greek poets also confessed, not without reason, "In him we live and move and have our being" (Acts 17:28).[10]

Most immediately and most often, this presence and activity is concretely experienced in the fellowship of the Spirit that emerges in human community in general and in ecclesial communities more specifically (cf. Anderson 1935; Son 2001). Individuals find their true particularity and identity "in Christ" precisely in being poured out on behalf of others and

receiving from others. The church emerges from the individuals who are gathered under a particular form of life inspired by Jesus. While the church is both informed by a received linguistic grammar and embodied in a specific set of material practices sanctioned by the church of the Day of Pentecost, at the same time the larger corporate body also consciously shapes its language and practices and intentionally transforms the habits of the individuals who constitute it.[11] Christians therefore transcend themselves in the body of Christ even while they are transformed by participation in that form of life. Such self-transcending transformation does not stop within the boundaries of the institutional church, of course. Christian mission brings the body and its members into the world, empowering activity directed toward the transformation of social structures and the establishment of justice in human societies (Rayan 1978). And accomplishment of these goals requires intersubjective participation and input from the human community as a whole. So our giving a cup of water to those in prison is our giving to Christ (Matthew 25:31–40, esp. 35), even as our receiving the cup of water from the Samaritan (and those not of faith or even those in other faiths) is our receiving from the Spirit of Christ (Luke 10:29–37). In this way, the concrete and specific field of activity belonging to those empowered by the Spirit of Jesus of Nazareth interacts mutually with the various other natural and sociohistorical fields of activity as each is being redeemed by God.

So, we have the embodied mind as a self-transcending reality precisely in its relationship with other minds and with its environment, and we have the social self transcending itself precisely in relationship with other ecclesial and social selves. But, insofar as creation itself can be said to be teleologically directed by the Spirit toward the consummation (e.g., Romans 8:19–23), human beings and communities are also directed eschatologically toward their Creator.[12] Yet, this eschatological transcendence and transformation will retain some continuity with the embodied and social character of the initial creation's structures. Herein we anticipate that the same Spirit "who raised Christ from the dead will give life to [our] mortal bodies" (Romans 8:11) not only in the existentiality of this life but also in the concreteness of the next (1 Corinthians 15), even as we confess that the Spirit is the pledge of the redemption of the people of God (Ephesians 1:13–14; 2 Corinthians 1:22) precisely through the social reconciliation to be accomplished at the eschatological judgment (Peters 1999; Volf 2000). In this way, the redemption of the world will be its transformation, not destruction. The Spirit who hovered over the primeval chaos will in the eschaton be the "communal, intersubjective figure, a personal power emerging out of many persons . . . , the wholeness toward which the oneness of God is pointing" (Hodgson 1994, 172).

Pratityasamutpada, Neuroscience, and the Person in Buddhism

In turning to Buddhism, we encounter its well-known and controversial doctrine of no-self (*anatman*). The following proceeds from the earliest Buddhist debates, through what the Zen tradition calls the "true self" in conjunction with the perspectives of Buddhists working in the neurosciences, toward a Buddhist understanding of human personhood as *pratityasamutpada*, or codependently originating. It is important to treat these Buddhist ideas on their own terms before attempting to compare them with the preceding Christian pneumatological anthropology.

Anatman *in Early Buddhism*. In the famous discussions between Nagasena and King Milinda, the quest to understand the human Ego is juxtaposed with the attempt to define the chariot. Just as the latter is but an "account of its having . . . the pole, and the axle, the wheels, and the framework, the ropes, the yoke, the spokes, and the goad," so is the Ego a convenient designation of the elementary aggregates (*skandhas*) that constitute what we understand as the human self (*Milindapanha* 27, in Rhys Davids [1890] 1963, 1.44). What are the elementary aggregates that combine to produce the self? The Theravadin theory, subjected to detailed analysis especially in the *Abhidharma* literature, was that the individual consisted of matter (*rupa*); sensation or feeling derived from the six sense organs of sight, hearing, smell, touch, taste, and mind (*vedana*); perceptions of color/shape, sound, odor, taste, sensations, and nonmental objects (*saññ a*); mental states or activities, including volition (*samkhara*); and consciousness (*viññana*) (Boisvert 1995). Because the five aggregates arise together along with their appropriate physical and mental objects, the Ego arises and fades away with them. Nagasena responds that it is on account of "the five constituent elements of being—that I come under the generally understood term, the designation in common use, of 'Nagasena'" (*Milindapanha* 28, in Rhys Davids [1890] 1963, 1.44).

Here it is important to note that the Buddha's denial of the existence of an eternal or substantive soul was directed against the Brahmanic doctrine of Atman. Whereas the latter idea of the soul, or Self, was intended to secure some measure of permanence behind the fleeting appearances of the world, the Buddha's concern was that to embrace this idea would render escape from the ill of samsara impossible. This would be because "When the uninstructed worldling is contacted by a feeling born of ignorance-contact, craving arises" (*Samyutta Nikaya*, 22.3.81, in Bodhi 2000, 1.922).[13] So his considerations were finally soteriological, pragmatic, and ethical. What was needed was a middle way between the Brahmanic eternalist or spiritualist understanding on the one side and the skeptical annihilationist or materialist conception on the other. Inevitably, this middle way was

understood as rejecting both the substantive self and the nihilistic self and as affirming the empirical, existential, and functional self of the *skandhas*.[14]

But can the idea of the empirical self on its own sustain the Buddhist soteriology? While the suffering self is an immediate datum of experience, does not the testimony of the Buddha and the *arhats* (saints) also confirm the "delivered self"? In this view, the achievement of nirvana is not the absolute extinction of the ontological self but the epistemological realization that we have mistaken the phenomenal self for the true self. It suggests that the true self cognizes that there is no substantial self, realizing that all concepts apply only to the phenomenal self. For these reasons, the personalists countered that the Buddha warned only against mistaking the illusory or false self as the transcendental and true self and not against affirming the true self as the true self.[15]

Recent studies such as those of Joaquín Pérez-Remón (1980) have therefore argued that behind the *anatman* or *anatta* language of the early Pali sutras is a transcendental self that lies beyond the scope of empirical determination.[16] Pérez-Remón's historical-critical analysis of the Pali canon suggests that the *anatta* concept is a relatively late concept in the Nikayas. Taken as a whole, the Nikayas in one sense support a dual reading of human beings as both *atta* (self) and *anatta* (no-self) and in another sense are not really concerned with the ontological denial of the self. Instead,

> . . . *atta* is profusedly used and very often refers to the existential core of man as opposed to the peripheral samsaric adjuncts . . . the *anatta* doctrine taught in the Nikayas does not consist in an absolute denial of *atta* but only in a relative one, referring to the *khandhas*, the senses, the objects of sense, the sense-contacts, the spheres of sense, which neither are the self nor belong to the self or affect it in any ontological way. (Pérez-Remón 1980, 149–50)

The *anatta* teaching thus has relative value rather than absolute primacy. As such, it is always subservient to the soteriological aims of the Buddhist quest for moral perfection, enlightenment, and salvation, all of which assume a transcendental *atta*. But here, Pérez-Remón admonishes, we are on the verge of what I would call a "negative anthropology," because "the nature of the true self is never made the subject of discussion [in Nikayas]. We are only told what is not the self and consequently what the self is not. Beyond that the only thing we are told is that the self is transcendent and therefore ineffable, beyond our powers of comprehension" (Pérez-Remón 1980, 304–5).

The result is that the *anatta* teaching is open to at least two readings. Taken at face value, it rejects the idea of a self-existent and eternal soul behind the aggregates constituting the human individual. Understood soteriologically, awakening to nirvana enables recognition of the phenomenon of human personhood as an ephemeral illusion even as it unveils the true but ineffable self. The dissonance between these interpretations may be resolved variously, following Pérez-Remón or other exegetes. It may

also be alleviated when connected with the later Madhyamaka doctrine of *sunyata* (emptiness). In this view, all things, including human persons, rocks, trees, and birds are equally devoid of self-existence (*anatman*) given their transitoriness (*anicca*) and codependent origination (*pratityasamutpada*).

The True Self and the Neurosciences. I suggest that the *anatman* tradition of early Buddhism has been transformed by the *sunyata* tradition of the Madhyamaka in such a way as to identify the true self to be precisely the person in relationship (*pratityasamutpada*). This is especially clear in the Zen tradition stretching from Dogen to Nishida and the twentieth-century Kyoto School (Stambaugh 1990; 1999; King 1991). Nishida's philosophy of *basho* understands emptiness as the field of energetic activity and becoming, as the principle of individuality, and as the field uniting opposites (Kopf 2001). Not coincidentally, the "person" in Japanese is *ningen*, which is a combination of "human" and "between," referencing the betweenness of human beings rather than their individuality. Nishida's *basho* captures this sense of betweenness, emphasizing the "field" within which human beings find themselves in relationship. Even more inclusively, as Yasuo Yuasa summarizes, "the essential destiny of human life is to be embraced by life's rhythms in natural space; it is to be together with the animals and plants, with all things that have life, with what the Buddhists call 'all sentient beings' or 'all living beings'" (1987, 45–46).[17] As such, the empty self is a convergence of fields unifying mind and body, self and other, and self and world. Only in the field of action emanating from the emptiness of *basho* are these traditional dualisms overcome. Thus, Nishida reflects the

> strong tendency in the Japanese philosophical tradition to graph the authentic self as a creative, productive "function" (*hataraki*), or "field" (*ba*) of life-energy. Consequently, the authentic self is felt and acquired through some sort of life-energy emanating downward from the metaphysical dimension; its field of acquisition and feeling is one's body-mind within meditative cultivation. . . . Nishida's acting intuition means to act as a self without being a self, to be guided by creative intuition while receiving its power springing from the *basho* vis-à-vis nothing, the region of the authentic self. (Yuasa 1987, 223–24)

Further light can be shed on Nishida's idea of the self as a field of energetic relationships realized through meditation with the help of the neurophysiological sciences (Yuasa 1987, chap. 9). Because human actions are conditioned primarily by the ignorance, disorderedness, and passions of the unconscious self, which in turn obfuscates the proper functionality of the nervous system, the meditative process of Buddhism in general and of Zen practice in particular are designed to uncover and allow the emergence of the true self. Put starkly, Zen meditation is a course of deconstruction, deprogramming, and depersonalization directed toward the cultivation of authentic selfhood.

Prolonged meditation with its precisely defined breathing techniques accomplishes this in two ways. First, it calms the mind by quieting the firing activity of nerve cells in the brain, thus creating longer-lasting and deeper pauses in brain activity. Second, it exerts a destabilizing influence on the mind's routines via sensorimotor deprivation and disruptions of sleep-waking cycles, among other means. The result is periodic and increasingly intense breakthroughs to the fullness of the present moment and reality as it is. This highlights the interconnectedness of the brain's capacity to change and the mind's capacity to creatively reconstitute the deconstructed self (Austin 1998, 641). Together, *zazan* (or sitting meditation in the Zen tradition) accomplishes the psychophysiological and biochemical changes that enable the process of the "deep emptying out from consciousness of every former subjective distinction and personal attachment" (Austin 1998, 571).

Enlightenment can thereby be understood as the twofold process of (a) bringing these aspects of the self to the surface so as to enrich the consciousness by integrating and assimilating these unconscious elements and (b) fully awakening and opening up to the suchness of the world so as to "totally, continually, and directly [be] in touch with what is going on in the present moment" (Austin 1998, 637). In this is the experience of total freedom, because the dualism between the self and otherness is overcome, enabling the individual to spontaneously relate to reality as it is and as it demands response (Benoit 1955, chap. 7; Crook 1990).

Herein we have a somewhat interactionist account of brain-mind-environment according to a metaphysics of emptiness and codependent origination. Cognition is connected not only to the brain but also to the entire human organism, without being reduced either to the brain or to the body. Further, cognition is interactive, and mind is therefore what it is only in and through its interrelational activity. Finally, consciousness is an ontologically complex public affair of reciprocity and mutuality. As such, the mind can be understood in terms of an emergent and supervenient reality consisting of affectively embodied interactions with the environment even while being reducible to neither the bodily functions nor the environmental constraints. The result is the hermeneutical spiral of lived experience $\leftrightarrow$ neural emergences $\leftrightarrow$ formal mental structures $\leftrightarrow$ lived experience, and so on. "Only a generative, mutual reciprocity can replace the age-old friction of duality that haunts both cognitive science and also the spiritual traditions" (Varela 2001, 234; see also Varela 2000).[18] Thus, the true Self emerges beyond absolutism and nihilism from the groundless nothingness that is "the very condition for the richly textured and interdependent world of human experience . . . , revealed in cognition as 'common sense,' that is, in knowing how to negotiate our way through a world that is not fixed and pregiven but that is continually shaped by the types of actions in which we engage" (Varela, Thompson, and Rosch 1991, 144). It is, to resort to

Nishida's language, to cut through, move between, and get behind (or beyond) the false dichotomy of subject and object precisely through embracing the activity made possible by Absolute Nothingness. Pursuit of this "question concerning *basho* vis-à-vis nothing amounts to asking how a self can go from the inauthentic to the authentic dimension" (Yuasa 1987, 57).

Pratityasamutpada *and the True Self*. While we should be cautious in our attempts to correlate neuroscientific research with Buddhist meditational practices and experiences, allow me to suggest how the preceding discussion of the authentic self as *pratityasamutpada*, codependently originated, enables a Buddhist understanding of personal selfhood that is consistent with the most recent advances in the cosmological, psychosocial, and neurobiological sciences. First, the true self is the embodied and affective self. Certainly there is plenty in the Buddhist tradition about the body as disgusting, repulsive, and to be renounced. Yet the body is also considered more positively as a skillful means for fulfilling the bodhisattva vow, even as there are various Buddha or luminous bodies. As important, Buddhists also recognize the intimate connectedness between brain and mind and between brain, mind, the emotions, and the affections (Williams 1997; cf. Damasio 1999; Varela 1997; Saron and Davidson 1997). At this level, the true self is nothing more or less than the empirical and phenomenal self, except without its being either reified or grasped after. Further, at this level, the true self as the empirical self is a concrete instantiation of the Madhyamaka principle enunciated in the *Heart Sutra*, that emptiness is form and form is emptiness (Fox 1985, 82). As such, emptiness is manifest through and realized in the particularities of empirical reality such that all things are empty of self-existence precisely in their interrelated concreteness. Similarly, the emptiness of human persons is manifest through and realized in the conventionality of their embodied and affective selves.

Second, the true self is the intersubjective self (cf. Odin 1996). Human persons are not only embodied and affective but also social, communal, and interpersonal beings. In part for this reason, the Buddhist "Triple Refuge" includes the Buddha, the Dharma, and the Sangha, the community of monks and nuns. Yet there is also the mutuality of the laity and the Sangha seen in their interdependence: the latter depending on the former for gifts of food and other mundane concerns and the former on the latter for ritual blessings (especially during death and burial ceremonies) and for the accumulation of meritorious karma. Most striking, however, is the bodhisattva's vow not to enter nirvana apart from the salvation of all sentient beings. Herein is depicted the interrelatedness of human identities such that the fulfillment of the bodhisattva's existence is intertwined with that of all sentient beings, even while any particular individual is the source and in that sense author of the bodhisattva's vow to begin with (Manimala 1991, esp. 211–17, 238–39).

Third, the true self is the environmental and ecological self. Embodied, affective, and intersubjective selves are fields of interpersonal activity, which converge to and emerge from complex and dynamic environmental networks that sustain animals, plants, and the natural world. So, samsara, which is also nirvana, is not only the entire field of the world taken as a whole but also the particular and interactive fields of animals, plants, things, and persons. The self-environment relationship is therefore such that the former shapes the latter as well as is influenced and in some ways determined by the latter. Hence, the self is a complex network of developing fields or streams of consciousness, holistic patterns, and relational sequences bound up with the dynamic movements of its environment. Of course, this is nothing less than the truth of the Buddhist doctrine of the relational self defined as a codependently arising field rather than as a substantive soul (Wilber 2000; Sachs 1983).

Fourth, from this, the true self is the acting, active, and acted-upon self. The embodied, affective, and environmental self is also a dynamic set of interactive relationships. Thus, for example, the Japanese language avoids using personal pronouns except when absolutely necessary, preferring directional words that highlight the relationship of the situation rather than the persons involved. In "I hit the baseball," my self and the baseball emerge together as aspects related by the act of swinging, such that "I" and the "ball" are no longer two. As such, the person "does not perform action; rather, action performs the person" so that the goal is to be "the personal act appropriate to the occasion" (Kasulis 1981, 139, 154; cf. 7–11, 56–61). Herein lies Nishida's point that human personhood be understood as a field of personal activity that consists of the complex and dynamic interrelationality of genes, culture, and environment. The lines between self and other (or self and nature), between subject and object, and between past, present, and future all become blurred in this view but not rejected altogether. This is as it should be in a dynamic ontology of interrelated fields rather than a static ontology of atomic substances, especially when applied to the human person.

So the emptiness of the self (*sunyata*) is but the flip side to the codependent arising of the self (*pratityasamutpada*). Together, they combine to chart the Buddhist Middle Way of conceptualizing the self as the activity of the individual in relationship to the whole and vice versa. As in the Jewel Net of Indra, the self's selfhood emerges precisely in its reflecting others even as, at the same time, the others are established in the same activity (Olds 1992; Cook 1977, chaps. 4–6). Herein lies a middle way between reductionism and personal absolutism: wholes are greater than the sums of their parts, even as wholes are empty without the parts and wholes are always parts of larger wholes. Herein also is the middle way of holistic intercausality between upward and downward (from the brain to the mind to the environment and vice versa) causation, between freedom

and determinism, between self-regulation and self-activity versus other-regulation and other-activity. Last, but certainly not least, the fact that information is exchanged through codified structures and interpersonal activity enables a biperspectival middle view between idealism on the one side and materialism on the other. Is this how Buddhists affirm both the individuality and the relationality of the self?

TRANSITIONAL THESES

I attempt in this essay to bring Christian and Buddhist understandings of human personhood in general and of the mind-brain and soul-body relations in particular into dialogue with the cognitive sciences. My goal is to enrich the Christian-Buddhist dialogue by a cross-fertilization of ideas drawn from the Christian, Buddhist, and cognitive science traditions. In this way, the dialogue between Christianity and Buddhism may perhaps be sustained and advanced, in part with the help drawn from a field neutral to the their respective interests and in part from the adjudicatory help that may be available from the cognitive sciences with regard to longstanding differences between conceptualizations of the self and no-self. But along the way, if the encounter between religion and science is to be truly dialogical, I also envision the possibility of the cognitive sciences being given fresh impetus through this encounter with two religious traditions. Might the metaphors of *pneuma* and *pratityasamutpada* stimulate further hypotheses to advance the discussions in both neurobiology and neuropsychology on the mind-brain and soul-body relationship generally and on human personhood specifically? I propose the following as emergent from the preceding discussion and suggestive for future inquiry.

First, emergentist theories of mind and consciousness are not entirely lacking in the Christian and Buddhist traditions. The pneumatological reading of the creation narratives and a *pratityasamutpada* metaphysic of human selfhood both find convergence with the emergentist hypothesis. Various questions arise in this framework that call for further inquiry in the cognitive sciences and religious traditions. What is the nature of consciousness, and how is it both continuous with and discontinuous from the brain (the body and material reality)? Is life after death possible within an emergentist view of human personhood, and, if so, how so? Finally, the methodological question: even if *pneuma* and *pratityasamutpada* both call attention to the relationality of all things, what distinguishes them, and how do they as religious concepts relate to scientific inquiry?

Second, and related to the first, whereas *emergence* emphasizes the mode of development or origination, *supervenience* calls attention to the structure or ontology of mind or consciousness and to the nature of the causal relations between mind/consciousness and body/brain. Convergences are apparent between the cognitive sciences and, more specifically, philosophy

of mind, and Christian theology and Buddhist metaphysics. *Pneuma* provides a theological justification for the distinctiveness of consciousness as a whole dependent upon but greater than the sum of its parts, which in turn provides, however provisionally, an account of freedom and responsibility. *Pratityasamutpada* in turn acknowledges the final unity of all things in emptiness but recognizes also the distinctive and undeniable particularities of things within the whole in terms of networks of fields. Applied to consciousness, the entire Buddhist soteriology along with its metaphysical underpinnings argue against any movement to undermine, reject, or explain away this phenomenon. Here again, questions for further inquiry persist: Within a supervenience account, is it theoretically possible that more complete understanding of the parts will finally unveil the whole realm of consciousness? If so, how so, if the whole is greater than the sum of the parts? If not, why not, if the properties of the whole are emergent from the properties of the parts? Methodologically, can the cognitive sciences illuminate the whole within a supervenience theory of mind?

Finally, the nonreductive physicalist thesis is especially attractive both theoretically and aesthetically (because it posits an ultimate monism) and methodologically and scientifically (because of emphasis on the material substratum of mind, thus enabling empirical inquiry). A pneumatological anthropology as holistic would emphasize the material (brain), natural (dust), social (other minds), and environmental (other creatures) nature of consciousness. The authentic self of the Kyoto School tradition of Nishida would emphasize the concrete field nature of human persons as empty of self-substance, as transitory (dynamic), and as codependently originating. Is either of these religious accounts committed to the physicalist thesis, even nonreductively so? Put another way, is the spiritual dimension of human personhood finally dependent upon brain and body, or is the subtle (base) consciousness finally also material in some respect? Or, does the nonreductiveness of the physicalist hypothesis finally require a transcendental consciousness that is immune or inaccessible to empirical investigation? These and other questions remain for the trialogue between religion and science, between Christianity and Buddhism, and between each tradition and the cognitive sciences.

NOTES

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1. Justifiably so for various reasons, including, I surmise, the constraints of space, the intended audience (this volume appears as the sixteenth in Fortress Press's Theology and the Sciences series), and issues of personal background, interest, and expertise.

2. "Priestly" and "Jahwist" are the names given by historical critics to the editors or redactors of the creation narratives. Genesis 1:1–2:4a uses *Elohim* and is generally thought to be related to materials concerned with ancient Israelite religious ritual, while Genesis 2:4b–4:24 uses the sacred Hebrew name of God punctuated as *YHWH* and concerned with *YHWH*'s personal cov-

enant relationship with Israel. There is much more to these names, of course; for details, see Anderson 1994, esp. chaps. 1 and 3.

3. See also McIntyre 1997, 193, for the thesis that "The Holy Spirit is God the Creator himself setting us in a right and responsible relation to the animal and natural order."

4. Here, I assume the overall thrust of the supervenience model as including, potentially, a variety of articulations ranging from Mario Bunge's (1980) emergent materialism to David Ray Griffin's (1998) nonreductive physicalism and panexperientialism. Other versions across this spectrum are noted at the appropriate junctures in what follows.

5. See Kauffman 1993, an imposing, massive, and technical book containing 650 pages of dense, fine-print argumentation and almost 50 pages of bibliography reaching to perhaps 1,200 sources.

6. For example, Blood 2001, chaps. 10, 11, 15. Yet it is certainly the case that we should be cautious in assuming that the plausibility of mental causation in this argument secures the theological right to talk about divine downward causation. This, I take it, is the center of Dennis Bielfeldt's (2000) concerns. Bielfeldt is led to argue for intralevel but not interlevel causation, even while attempting to salvage the concept of supervenience in theological articulation by steering between materialism and dualism, on the one hand, and avoiding the peril of creation determining the creator, on the other.

7. Suggesting, of course, a holistic view of the human as in Peacocke 1986. Arguably, contemporary holist anthropologies capture Thomas's achievement of an Aristotelian synthesis of human beings as hylomorphic creatures including both essential form and quantitative shape without the vitalistic implications and liabilities of the thirteenth-century articulation. See Pegis 1934, chap. 4, for a summary of Thomas's understanding. For contemporary restatements of Thomas's Aristotelianized views, see Machuga 2002, esp. chaps. 2 and 7; Murphy 2002, 358–64.

8. On the links between philosophies of mind and the biology of organisms and their environments, see Godfrey-Smith 1996. For phenomenological analyses, see Merleau-Ponty 1962, esp. part 1, and Gurwitsch 1964.

9. Amy Pauw Plantinga (1993), Nicholas Lash (1998), and Stanley J. Grenz (2001) all draw from trinitarian imagery in their discussion of human personhood and identity. See Schrag 1997 for more philosophical analysis and Shults 2003 for theological elucidation.

10. Hence, the work of brain scientists such as James Ashbrook (Ashbrook 1984; 1993; Ashbrook and Albright 1997), Eugene G. d'Aquili and Andrew B. Newberg (1999), and Ilkka Pyysiäinen (2001) can be helpful in their mapping of some of the neurobiological means through which human beings engage the Divine on this side of the eschaton. Presumably, there will be continuity and discontinuity of such engagement on the "other" side.

11. The liturgical account of the church as worshipping community provided by David Ford (1999) points to the material dimension of ecclesial identity; the supervenience account of the church provided by Brad J. Kallenberg (2001) highlights its emergentist and socially directed character.

12. While using "soul" language, Keith Ward's anthropology is consistent with the emergentist model sketched here. He writes: ". . . the soul by nature 'transcends'; it is oriented away from itself, to what is beyond itself"; it is directed, finally, toward relationship with God, "the true end of the soul, and in this sense, its goal, its proper purpose and true nature" (Ward 1992, 143, 151).

13. So much so that later Buddhists including Vasubandhu insisted that there is no salvation apart from Buddhism, because other traditions affirm the erroneous view of the soul's existence; see the appendix to the eighth chapter of Vasubandhu's *Abhidharmakosa*, in Stcherbatsky 1970, 11–15, or de La Vallée Poussin 1988–1991, 4.1313–14.

14. David Kalupahana (1987, 147) concludes, "It is this method of deconstruction in the analysis of experience that eliminated [sic] the belief in the purity of any form of experience, feeling, sensation or even knowledge, that is represented by the Buddha's conception of non-substantiality, leaving in its trail, not any form of absolute nothingness or emptiness, but the empirical notions of the 'dependent' and 'dependence' providing justification for an enlightened form of ethical pragmatism." The soteriological dimension of Buddhist views of the self is the dominant thread throughout Watson 1998. See also Johansson 1970 and de Silva 1979 for existentialist and functionalist interpretations of selfhood, respectively.

15. See Vasubandhu's *Abhidharmakosabhasyam*, in de La Vallée Poussin 1988–1991, vol. 4, chap. 9. The personalist argument is preserved, and countered, by Vasubandhu, a fourth- or fifth-century (C.E.) monk who is perhaps the chief systematizer of the mind-only idealism of the Yogacara School of Mahayana Buddhism. For a summary of this series of arguments, see George

Grimm (1978). Grimm is not alone on this issue. Peter Harvey (1995, 7–8, 17–19) notes that this interpretation has been proposed by a wide range of recognized Buddhist scholars over the decades, including Caroline Rhys Davids, Ananda Coomaraswamy, I. B. Horner, and even Edward Conze. This same point is argued also by Christmas Humphreys (1951, 86–88).

16. See also Steven Collins (1982), who argues a similar thesis to Pérez-Remón from the perspective of early Buddhist reactions to and transformations of Brahmanic views of the human self.

17. Chapter 2 of this volume is an excellent discussion of the Japanese view of the mind-body relationship in light of Nishida's philosophy. See also Yuasa 1993a, b.

18. Varela is a neuroscientist at the Ecole Polytechnique, Paris, and a practicing Buddhist. Elsewhere, Varela has teamed up with biologist Humberto Maturana to explore a *via media* between representationalism and solipsism in understanding of the biological aspects of cognition; see Maturana and Varela 1980 and 1992, esp. chap. 7.

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