

## Radical Behaviorism and Buddhism: Complementarities and Conflicts

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Comparisons have been made between Buddhism and the philosophy of science in general, but there have been only a few attempts to draw comparisons directly with the philosophy of radical behaviorism. The present review therefore considers heretofore unconsidered points of comparison between Buddhism and radical behaviorism in terms of their respective goals, conceptualization of human beings, and the outcomes of following either philosophy. From these comparisons it is concluded that the commonalities discerned between these two philosophies may enhance both philosophical systems.

*Key words:* radical behaviorism, Buddhism, free will, Eastern philosophy, self

The foundations of the experimental analysis of behavior were developed by B. F. Skinner in the middle part of the 20th century. In addition to this approach to the science of behavior, Skinner also developed its philosophical underpinnings, known as radical behaviorism (cf. Baum, 2005; Skinner, 1974). Radical behaviorism sought to articulate the principles by which the control of human and nonhuman behavior might be understood, emphasizing the role of the environment in this control. This philosophy supported the science of the experimental analysis of behavior, through which the variables that control behavior can be determined.

The philosophy of Buddhism is based on the teachings of Siddhartha Gautama from the 6th century BCE. Born into royalty, Gautama rejected his social status to seek a simple life. One day, while meditating, Gautama reached enlightenment (and thus

could be called the *Buddha*, or, “enlightened one”). The Buddha suggested first and foremost that there is suffering inherent in life. It is possible to escape this suffering, however, through proper modes of living; these prescriptions for life are outlined in the Eightfold Path (Mitchell, 2002).

At first glance, radical behaviorism and Buddhism may seem like disparate philosophical entities. One is a philosophy that informs a science; the other is a philosophy that informs a religion. Science and religion often have different goals, and, therefore, different methods for achieving those goals. In his framework for conceptualizing philosophy and religion, Gould (1999) has controversially suggested (cf. Dennett, 1995) that these areas of human conduct should occupy *nonoverlapping magisteria* (NOMA). That is, religion and science should remain divided into mutually exclusive categories, with the intent that one should not interfere with the domain of the other. Although these two areas have frequently been separated, identifying commonalities that exist between religion and science may result in a better informed analysis of each. Galuska (2003) suggested that the discussion of similarities between radical behaviorism and religion may be more fruitful than the discus-

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sion of differences. Commonalities between science and religion may result in fewer competing demands placed on followers of each, and, perhaps, as Galuska suggested, allow the emergence of new and novel solutions for socially significant problems. In discussing spirituality and psychology, Pear (2007) observed that monistic followers of radical behaviorism find Buddhism to be philosophically more complementary to radical behaviorism than traditional dualistic religions, but Pear does not delineate the complementarity. Pear's observations mirror the ideas of Ricard and Thuan (2001) who commented that,

Even though Buddhism and science have radically different ways of investigating the nature of reality, this does not lead to an insuperable opposition, but rather to a harmonious complementarity. That is because both are on quests for the truth, and both use the criteria of authenticity, rigor, and logic. (p. 267)

What follows is an attempt to identify several similarities between these two seemingly disparate philosophical entities. These similarities are based on common goals and outcomes, that is, functions, as opposed to necessarily similar methods or forms. After an analysis of these concordances, it is possible to conclude that these two philosophies have a great deal in common, despite different backgrounds and goals. On further analysis, it may be possible to conceptualize aspects of Buddhism as variants of behavioral philosophy, thereby building yet another bridge between the latter and other great intellectual traditions.

*Comparing Buddhism and radical behaviorism.* As epistemological systems, Buddhism and radical behaviorism each provide frameworks that shape the behavior of their adherents (i.e., people who describe themselves as followers of the philosophical system and engage in behavior consistent with this assertion). Under-

standing how these entities operate similarly may permit a better understanding of the behavior of the followers of each. This understanding may be important in terms of communicating between disciplines or groups of people; with better understanding, communication between areas may be enhanced. Morris (2003) commented on the benefits of consilience of knowledge across different intellectual domains, suggesting that it may be mutually beneficial for related epistemological approaches to engage in dialogues about interpretations of phenomena of mutual interest. Although there are clear differences between these systems of thought, the comparison of Buddhism and radical behaviorism may have at least three relevant outcomes. First, the comparison of these entities may provide insight into ways of describing environment-behavior relations. These insights could include additional terminological or conceptual developments relevant to behavior analysis. Such insights that result from comparisons between disciplines may not be attainable if radical behaviorism was considered in isolation. For example, concepts in the area of behavioral economics (e.g., unit price, sunk cost, substitutability, and complementarity) have made significant contributions to the conceptualization of empirical problems in the experimental analysis of behavior. These concepts emerged from a dialogue between disciplines. Second, when comparing radical behaviorism to other disciplines, it may be possible to better clarify its position among other philosophical systems. Such classification of radical behaviorism may allow increased clarity within this system. Third, the comparison of radical behaviorism and Buddhism may provide a model for the comparison of radical behaviorism to other superficially disparate philosophies. Such comparisons may generate dialogue between areas of inquiry, resulting, ultimately, in the integration

of radical behaviorism and other philosophical systems. This type of dialogue and integration may be relevant for the wider acceptance of the philosophy, and may aid its conceptual development. Furthermore, this pursuit may be worthwhile in terms of disseminating information across worldviews, providing critical analysis of each system. As Kantor (1970) commented, "One of the wisest sayings that Plato attributed to Socrates is: 'a life unexamined, uncriticized is not worthy of a man.' I choose to add: 'neither is the unexamined and uncriticized scientific work of man worth doing'" (p. 101).

Given that behavioral philosophy has an extensive history and that there is a large population interested in Eastern philosophy, it is surprising that only Williams (1977, 1986) and Baum (1995) have directly compared the two. Williams (1977) described the rejection of dualism in both Zen Buddhism and behaviorism. He commented on Zen Buddhism's focus on the removal of abstract thinking by the individual and suggested that this practice is similar to the eschewal of mentalistic explanations and theorizing by behavior analysis. The simplification of theoretical language to a few functional terms (e.g., reinforcer) instead of a net of theory is consistent with this eschewal. Subsequently, Williams (1986) continued his discussion of parallels between Eastern thought and behaviorism. Specifically, he commented on the limitations of verbal behavior and the way in which verbal behavior influences scientific behavior, as well as the integration of the individual organism and the environment that was common to both behaviorism and Buddhism. Williams discussed the necessity of removing the dualistic framework that dominates colloquial verbal behavior in understanding both Buddhism and radical behaviorism, noting that the subject-object distinction is not essential for classification purposes in either system. In

Buddhism, the individual is connected with his or her environment; in radical behaviorism, the organism is interactive with its environment. Recognizing parallels such as this may facilitate the careful examination of our own practices. Williams suggested that although there are major differences between the philosophical systems, a discussion of the similarities between such schools of thought may lead to an appreciation and improved understanding of both.

Baum (1995) discussed the eschewal of agency by radical behaviorism and the common ground found between the conception of self in behaviorism and Eastern thought. Agency was defined by Baum as "the notion that actions are distinct from natural events" (p. 94). Because radical behaviorism is a philosophy of science, and science deals with natural events, radical behaviorism has no explanatory role for such agency. Like Williams, Baum also criticized the dualism inherent in the English language, especially when considering scientific language. Furthermore, Baum argued for the blending of behavioral and Eastern philosophies as a palatable way of presenting behavior analysis to a broader community: "If radical behaviorists were interested in improving their public image, it might be possible to blend the New Age with behaviorism and produce a presentation that would be both respectable and nice" (p. 105). The blending of philosophies, then, has potential value in terms of integrating behavior analysis with a broader cultural context.

Even though the discussions of language by Baum and the removal of the concept of self by Williams were innovative, the comparisons of these two are relatively limited in scope in relation to the myriad topics covered by a religion as universal as Buddhism. Taking the ground-breaking analyses of Williams and Baum as a starting point, the present paper

extends the comparison of these philosophical systems with the goal of contributing to the three outcomes described above.

### POINTS OF COMPARISON

The present review focuses on three major points of comparison: respective goals, conceptualization of human beings, and possible outcomes of following each philosophical system. None of these three points have been previously discussed in the behavior analysis literature. Although certainly not exhaustive, these points were selected because of salient parallels that were observed between them in Buddhism and radical behaviorism and to spur future explorations of the relations between behavioral philosophy and other areas of discourse.

In addition, each of these topics has pragmatic value, in that the philosophies of both systems contribute in a specific way to the useful working of the system. Thus, to analyze the efficacy of the philosophy, it is valuable to consider the functions of each. The conceptualization of the human being determines, to a large extent, how the philosophy will be applied, and is thus important to consider in a complete analysis. Perhaps it is possible to consider the specification of human nature as an intermediate step between goals and outcomes of a philosophical system. That is, the outcomes are tied directly to the goals and the way in which the philosophy is applied; application is directly influenced by the consideration of human nature.

*Respective goals.* Skinner extended earlier behavioral thinking, emphasizing the prediction and control of behavior. The behavioral philosophy that he developed—radical behaviorism—provided the understanding required to achieve these twin goals of prediction and control. Through an experimental analysis, Skinner be-

lieved it was possible to identify underlying principles of behavior that transcend species. In the Skinnerian framework, the environment is a major agent of behavioral control (cf. Skinner, 1974, p. 19). The malleability of behavior through changing environmental contingencies leads to the possibility that behavior (of both humans and nonhuman animals) can be altered. This, in turn, leads to the possibility of large-scale social change. As Skinner (1971) wrote, “The major problems facing the world today can be solved only if we improve our understanding of human behavior” (pp. 8–9). Once prediction and control are achieved, relevant technologies may be employed to change behavior, and it becomes possible to effect socially desirable change, perhaps ultimately improving the human condition.

Because Buddhism is a philosophy of a religion rather than a science, the goals are markedly different from those of radical behaviorism. A scientific framework, however, is applicable in Buddhist thought. Ratanakul (2002) suggested that the beliefs that existence is orderly and that this order is knowable by humans are central to Buddhist philosophy. Here, the world may be described as orderly in that it contains identifiable, systematic relations between components. Recognizing order allows the individual to respond appropriately to the components thereof. Once order is found, it may be possible to tact the principles that describe or control that order. Given that the search for order is important within the Buddhist philosophy, it may be possible to conceptualize Buddhism from Russell’s (1935/1997) definition of science. Russell stated that science was a system in which facts about the world are connected to each other with laws “making it possible to predict future occurrences” of events (p. 8). Ricard and Thuan (2001) wrote that “Buddhism is basically a science of en-

lightenment” (p. 3). One interpretation of Ricard and Thuan’s statement is that the philosophical underpinnings of Buddhism prescribe an orderly system of laws and principles that can be applied to the lives of its followers such that they can achieve a goal or set of goals (cf. James, 1907/1963), thus in a sense predicting or increasing the likelihood of future occurrences. Ricard and Thuan then went on to comment,

[Buddhism’s] purpose is not to find out about the world of phenomena for its own sake, but because it is by understanding the true nature of the physical world—emptiness, interdependence—that we can clear away the mists of ignorance [to] open the way to enlightenment. (p. 276)

Buddhism, then, like other scientific pursuits (e.g., physics, chemistry, behavior analysis), seeks to understand the nature of the physical world. Although it is a meditative rather than proactive system of gaining knowledge, Buddhism may be considered scientific, in Russell’s sense of the term at least. This perspective allows an analytic approach to Buddhism that is similar to the approach used when considering radical behaviorism.

Through the practices associated with behavior analysis (e.g., the experimental analysis of behavior and applied behavior analysis) radical behaviorists discover principles that may be applied to improve human life. These contributions occur at both the level of the individual and at the level of society. At one extreme, Roberts and Neuringer (1998) described how behavior-analytic methods may be adapted by a single individual to improve his or her quality of life through self-experimentation. At the other, Baer, Wolf, and Risley (1968) commented that, “Better applications [of behavior-analytic technologies], it is hoped, will lead to a better state of society, to whatever extent the behavior of its members can contribute to the good-

ness of a society” (p. 91). In a similar spirit, a primary goal of followers of Buddhism is to discover means by which the individual can achieve enlightenment and escape from the suffering inherent in the world. To the extent that the enlightenment of the individual can improve society, the point made by Baer et al. also may be applied to Buddhism.

A basic tenet of Buddhism is that suffering is inherent in the world; to escape this suffering (i.e., reach nirvana), one must follow the behaviors prescribed in the Eightfold Path. When these rules are observed, it is possible to identify the impermanent and interdependent nature of all things. Here, impermanence is conceptualized as a state of constant change and a lack of static entities. Interdependence is the concept that every thing that exists in the universe is linked to every other thing; the actions of a single individual have ramifications for everything else that exists. It is believed that through the cultivation of certain behaviors (as described by the Eightfold Path) it is possible to escape from the suffering of this world, and to achieve nirvana (i.e., freedom from suffering and extinction of the individual being).

Several of the behaviors prescribed in the Eightfold Path focus on the interactions between the individual and the surrounding world. For example, *right action* suggests that an individual should do no harm to any sentient beings. Thus, to achieve enlightenment (i.e., the ability to observe both interdependence and impermanence and thereby be removed from suffering), the required changes occur at the level of the individual, but with societal implications. Once an individual becomes enlightened, attachment to the world ceases, and craving and suffering also end (Mitchell, 2002). Although the object of study is different—the life of the individual versus the behavior of organisms—Buddhism and radical behaviorism emphasize the goal of

gaining and subsequently applying knowledge to generate societal improvement.

As does behavior analysis, the practice of Buddhism allows the possibility of improvement through observations leading to principles that are, in effect, ways of attaining goals. Here, the underlying principles that lead to nirvana (the end of suffering) are outlined in the Eightfold Path: *right understanding, right thought, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration* (Mitchell, 2002). These laws were derived from the Buddha's reflection on human behavior and meditation on how to end attachment, and thereby end suffering. Ratanakul (2002) suggested that Buddhism is designed to seek truth that can eliminate human suffering and subsequently improve the human condition. As evidenced in *Beyond Freedom and Dignity* (1971) and many other writings, Skinner would likely agree that this is also a goal of his science of behavior. In *Beyond Freedom and Dignity*, Skinner commented on the problems facing the contemporary world. He stated "What we need is a technology of behavior ... [to prevent] the catastrophe toward which the world seems to be inexorably moving" (p. 3). Skinner thus believed that the application of behavioral technology was *required* to improve the human condition and preserve the world for future generations. In the same way that followers of Buddhists apply the Eightfold Path to improve their individual life, the followers of behaviorism apply their technology to improve life. It does not seem to be much of a leap to state that the end of suffering may be possible, at least in principle, through the application of each system.

*Conception of the human condition.* As either the study of internal life or the study of behavior, specific conceptualizations of the human condition are important in both Buddhism

and radical behaviorism. Neither school of thought presents a case for a *self* in the colloquial sense of an independent agent (cf. Baum, 1995). For Buddhists, the self is defined contextually. One of the primary tenets of Buddhism is the interconnectedness of all things. Thus, Buddhism rejects the notion of a self as an independent entity separate from the environment. "The distinction between 'self' and 'others' is purely illusory. Buddhism calls the true state of reality 'emptiness,' or the absence of intrinsic existence" (Ricard & Thuan, 2001, p. 13). Aurobindo (1999) commented on the multiple influences on the self, including the "various stuff of Nature" (p. 363), influences of the physical environment, the nervous system, and the social environment. The context, then, is crucial for understanding the individual; without this context, there is no *self* to speak of.

In an apparent paradox, however, Buddhists may talk of a self as a functional label for the individual. This *true self*—that is, the functional label used to describe the individual—is conceptualized as "the person in the relationship' (*pratityasamutpada*). This is the concept of 'codependent origination'" (Young, 2005, p. 155). Codependent origination describes the interconnectedness of everything: Nothing can exist independently of everything else. When examining the self, then, it is only possible to talk of the self in relation to everything else that is occurring or has occurred. Information about the self (or attributes of the self) can be understood only through an analysis of the environment in which it is conceptualized (e.g., the individual's relationships with others; such an approach is reminiscent of Kantor's, 1970, interbehaviorism, in which the environmental system in which behavior occurs is considered to be inseparable from the act itself; see Morris, Higgins, & Bickel, 1982, for a discussion of relations between inter-

behavioral psychology and radical behaviorism). Ultimately, when an individual reaches enlightenment, all concepts lose value. The goal of nirvana, put another way, is to remove the sense of attachment to things that are only illusory and impermanent. Once the impermanent (i.e., context dependent) nature of things is realized, it is possible to reach a higher state of being (i.e., enlightenment). This concept of the self is different from the traditional Western view of the self as a free-standing entity, acting, indeed, in an environment, but ultimately a free agent.

The behavior-analytic conception of the self is also different from this traditional Western view. Skinner (1953) described the self as “an organized system of responses” (p. 287). Skinner commented on the role of the environment in controlling the behavior of the individual, further supporting the idea that the self is not an independent entity. For example, he suggests that behavior varies between interactions with family and close friends as a function of discriminative control exerted by each. This perspective differs, as Chiesa (1994) discussed, from the traditional Western concept of self. She wrote, “the bounded and essential self is a property of cultural thinking rather than an ontological reality ... the person or the self in western thinking is made up of something other than behavior ... an appendage to another system: that other system is considered to be of primary importance” (p. 98). According to radical behaviorism, as a contrast to the typical Western idea, descriptions of the self can be replaced with descriptions of behavior without losing any depth of meaning. Thus, in both radical behaviorism and Buddhism, the notion of the self is dependent on the environmental context and is in opposition to the traditional Western concept, resulting in a very similar concept of self in

these superficially disparate intellectual traditions.

The Buddhist concept of self is concordant with radical behaviorism in other ways as well. For example, considering the self only within its context removes the possibility of an independent causal agent existing (within the skin or otherwise). Williams (1977) suggested that both behaviorism and Buddhism “attempt to integrate the person into the environment and overcome the subject/object split which seems indigenous to other views” (p. 5). In this way, the functional unit of behavior supersedes the dichotomy between organism and environment. The functional definition of the self therefore supersedes the structural definition. As a discipline, behavior analysis is predominantly concerned with functional—rather than structural—units. Here, the word *function* describes the relation between the behavior and its consequences; the word *structural* refers to the topography of behavior. The operant, the basic functional unit of behavior, exemplifies the importance of functional units in behavior analysis (cf. Glenn, Ellis, & Greenspoon, 1992). Through the manipulation of environmental events, the likelihood of behavior occurring can be changed (as in the case of reinforcement, where the behavior is more likely to occur in the future). For example, R. G. Smith, Vollmer, and Pipkin (2006) emphasized the utility of functional analyses of problem behavior of individuals with developmental disabilities and suggested that the use of function-based treatment was more fruitful than the use of treatments based on topography alone. It is the functional nature of the operant that permits the possibility of prediction, control, and change.

The verbal behavior associated with describing a self as an entity relates to function rather than topography, and function is, ultimately, context dependent. Descriptions of

self are descriptions of the individual's interactions with his or her environment. No specific topography of the self is assumed; to make such an assumption would require the presence of an agent akin to a homunculus dwelling within the individual. Skinner (1974) suggested that the self "is at best a repertoire of behavior imparted by an organized set of contingencies" (p. 164). Thus, in radical behaviorism, the repertoire of behavior supersedes any internal agent. Baum (1995) also commented on this notion, indicating that the description of the self is a description of a set of behaviors. In both of these instances, the structural self is vanquished to a place of lower import in favor of a description of how the organism functions in its world.

Despite the removal of an independent self acting as an agent, Buddhists retain the notion of free will. Ratanakul (2002) goes as far as to say that Buddhism requires free will, "without which liberation from the life cycle is impossible" (p. 118). Free will allows the individual to achieve the ultimate goal: the escape from the suffering of life. Without free will, humans are unable to behave in the way that allows them to escape from this suffering. Within a completely deterministic worldview, the actions of the individual would never warrant escape that leads to nirvana. A parallel argument may be applied in Christianity, in which it is necessary for individuals to choose to live in particular ways to achieve salvation. The individual must be personally responsible for his or her own actions for the ultimate escape from suffering to occur. On closer inspection, however, the notion of free will in Buddhism and behavior-analytic determinism have functional parallels.

In the first instance, for radical behaviorists, there is no room for free will. To allow it is to deny determinism, a cornerstone of any science. Chiesa (2003) noted, "Because human action takes place in the same

physical universe as all other phenomena, behaviorists have no objection to determinism, and, for the behaviorist, determinism does nothing to undermine the richness, the individuality, and the complexity of the human experience" (p. 243). Related to the goals of prediction and control of behavior, it is a logical necessity that behavior is determined by factors related to basic, knowable principles. The notion of free will is incompatible with this logic. If free will were possible, the contingencies of reinforcement in effect would not be responsible for control. This would lead to practical problems in the attainment of the goals of prediction and control of behavior. Without knowledge of controlling variables (which the existence of "will" of experimental subjects would make difficult), it would not be possible to engage in this scientific enterprise with any success.

A major function of the self in a conceptual system that contains free will is that of assigning individuals credit or blame (as appropriate) based on their behavior. Thus, it may be easy to experience compassion towards people when they do good works and place blame when they fail to meet the expectations imposed on them. When free will is removed and determinism is accepted, it is not the individual that is responsible for the observed actions. Instead, myriad variables may be implicated as explanatory factors; the invocation of these variables removes the responsibility from the individual, placing it on these other factors. When situational or historical variables are implicated, it may be easier to be compassionate towards individuals who engage in behavior that may be considered bad than when the individual is, because of assumed free will, responsible for his or her own behavior (Chiesa, 2003). Chiesa commented on the increased possibility for compassion towards individuals who engage in undesir-



able behavior. For, if given the same history and placed in the same situation, any individual likely would respond in the same way. This deterministic outlook thus allows compassion towards people who may not behave in ways that are deemed “correct” by the culture at large and permits a striving for understanding of the variables that control behavior.

Despite its adherence to a structural notion of free will, which is in contrast to the determinism of radical behaviorism, Buddhism adopts a similarly compassionate position in its doctrine of mindfulness. Although the question of free will has different answers in these philosophical systems, the outcome of compassion is maintained in both. Mindfulness is prescribed by the Eightfold Path, and involves a broad sense of awareness of the behaviors in which the individual is engaging. “Mindfulness is a process that involves moving toward a state in which one is fully observant of external and internal stimuli in the present moment, and accepting (rather than attempting to change or judge) the current situation” (Orsillo, Roemer, Lerner, & Tull, 2004, p. 77). Rather than simply reacting to stimuli, the mindful person is assumed to fully experience situations, attending to aspects of the environment that typically may not control behavior. When an individual is mindful, it is possible for him or her to experience endless compassion towards all living beings.

Mindfulness seems best considered as an example of sharpened discriminative control, with the behavior of the mindful individual controlled by fine variations in the environment as a function of differential reinforcement for these practices. The shaping of such behavior is possible through methods analogous to those used by Ray (1969), who used combinations of stimuli associated with different reinforcement histories to demonstrate the acquisition of selective attention (i.e., responding to one

aspect of the stimulus and not the other when the stimuli were combined). Ricard and Thuan (2001) suggested that the goal of Buddhism is to “develop love and compassion, and to eradicate ignorance by following the path of enlightenment” (p. 9). These authors further define Buddhist enlightenment as “a state of supreme knowledge combined with infinite compassion” (p. 11). Through the attainment of the infinite compassion of enlightenment, it is possible to truly understand the actions of the people in the world and to be truly empathetic toward them. This understanding allows the possibility of generating complete and enduring feelings of love for all beings; stated more behaviorally, this allows the possibility of tacting the effects of contingencies described as love towards all people. Skinner (1959/1999) wrote, “A tendency to feel compassionate would contribute to the survival of the species if it induced people to protect and help each other, but it is the *behavior* of protecting and helping others which is selected by the contingencies of survival” (p. 331). Thus, according to Skinner, to induce positive change in the world, it is necessary not only to feel compassion but also to behave in accordance with this feeling. The necessity of action suggested by Skinner could be seen as parallel to that of Ricard and Thuan—instead of a path of individual enlightenment, however, Skinner’s comment suggests action on a broader scale, affecting more than one person at a time. Irrespective of this difference, both Buddhism and radical behaviorism require change on the part of the individual for compassion to develop. In one system, such change comes through the free choices made by the individual. In the other, change comes within a deterministic system of environment–behavior interactions.

Change at the level of the organism is common to both Buddhism and radical behaviorism. One interesting

concept of Buddhism, expressing the essence of change, that initially may seem contrary to radical behaviorism is reincarnation. Buddhists hold that, at the end of life, it is possible for the form of the individual to be changed into something other than its previous form. Although it denies the transmigration of the soul, this notion of reincarnation is foundational in the philosophy. This traditional teaching has been reconceptualized by contemporary thinkers as a constant state of change. Hanh (2002) suggested that “every moment is a moment of rebirth” (p. 126). As an example of what this would mean, Hanh also wrote, “After one in- and out-breath we have already become a different person” (p. 71). This modern view is compatible with behavior analysis. Rather than speaking in mystical terms, the transitions to which it refers are happening in the life of the individual.

Following each instance of reinforced behavior, the organism has, by definition, changed. Skinner (1974) stated, “Something is done today which affects the behavior of an organism tomorrow ... an organism is changed when exposed to contingencies of reinforcement” (pp. 236–237). This change comes in the form of an increased likelihood that the behavior will occur in the future. Although it is possible that certain physiological mechanisms participate in this process, Skinner left the specification of these mechanisms to physiologists. For the radical behaviorist, it may not be necessary to appeal to physiological changes to explain behavior. Skinner (1953) commented that physiological changes that correlate with behavioral changes may be difficult to observe. Even when they could be completely observed, Skinner was not convinced of their utility:

Eventually a science of the nervous system based on direct observation rather than inference will describe neural states and events which immediately precede instances of be-

havior. ... These events will in turn be found to be preceded by other neurological events, and these in turn by others. This series will lead us back to events outside the nervous system and, eventually, outside the organism. (p. 28)

In a science of behavior, it may be sufficient to speak of order at the level of the environment–behavior interaction and not appeal to other universes of discourse. Without an appeal to physiology, it is still possible to assume that, after contact with contingencies, the organism is changed, particularly given the previous discussion of defining the organism (the self) in terms of a behavior–environment unit. It is thus possible to conceptualize an interaction between the organism and the environment that results in a constant state of change. This constant state of change does not seem far removed from the contemporary notion of Buddhist reincarnation.

The present analysis has, so far, focused on reincarnation during the life of the individual. According to Buddhist thought, when individuals die, they continue to exist, but in a different form. The body breaks down and changes, as water changes as it goes through the cycle from clouds to the ocean (cf. Hanh, 2002). When considering death from a behavior-analytic standpoint, the situation becomes slightly murkier. When an organism dies, by definition, behavior ceases. Instead of focusing on the behavior of the dead organism, perhaps a more fruitful behavior-analytic perspective of death requires the analysis of the behavior of people who have shared an environment with the deceased. When people die, behavior with respect to them changes in quality. Instead of serving as a discriminative stimulus for attention or other forms of social reinforcement, behavior directed towards that individual may be extinguished. The departed may be missed, in the sense that Skinner (1953) described loneliness

and nostalgia (p. 165): Behavior with respect to that individual is no longer directly reinforced. Over time, behavior towards the deceased may weaken in strength or be controlled by other stimuli (e.g., personal effects, photographs, significant locations). Behavior with respect to the deceased individual may eventually be extinguished, or may come under the control of different stimuli (e.g., as by a story or memory about the individual rather than an interaction with him or her). Those aspects of the individual that are “important” continue in the behavior of family members, in their stories and actions alike. More broadly, the “important” behavior of an “important” person (e.g., Skinner, Buddha) continues through the collective works that are transmitted in the form of such things as writings and intergenerational stories. These works in turn are reworked and carried forth by subsequent generations, thereby preserving what may be said to be the essence of the originator, albeit perhaps in a modified form. Cultural selection (cf. Glenn, 2003) may be the mechanism whereby this process occurs. Here it bears repeating that, in both philosophical systems, death may be conceptualized as a continuous state of change.

In Buddhist philosophy, “the achievement of nirvana [e.g., escape from the life cycle and the suffering inherent therein] is not the absolute extinction of the ontological self but the epistemological realization that we have mistaken the phenomenal self for the true self” (Young, 2005, p. 154). Here, then, nirvana could be reinterpreted as the removal of the self. This may be more relevant for the behavior-analytic conceptualization of the individual. Through the removal of the illusory sense of self, a Buddhist believes that an individual can be liberated. In the same way, a radical behaviorist believes that with the removal of the construct of the self, the individual can be properly

informed and achieve an accurate understanding of how the world works. With an accurate understanding of the way the individual functions within the environment, he or she may be more effective in the world and better able to effect the changes prescribed by his or her particular worldview. The notion of effective action leads directly to the consideration of the pragmatic outcomes of behaving in accordance with Buddhism and radical behaviorism.

*Pragmatic outcomes of these philosophies.* A final point of comparison between Buddhism and radical behaviorism is the pragmatic results of following each philosophy as a way of life (i.e., what these philosophies allow individuals to do; cf. Baum, 1995, p. 23). Specifically, the application of principles to make improvements and an openness to change will be considered. Zuriff (1985) described radical behaviorism as an example of a pragmatic philosophy: “Pragmatism regards knowledge and belief as instruments to satisfy human needs and to further human interests” (p. 257). Baum (2005) reiterated this position, stating that “Modern, radical behaviorism is based on pragmatism” (p. 30) (cf. Lattal & Laipple, 2003). As with all philosophies, the knowledge gained through their application satisfies human needs and furthers human interests only to the extent that these entities influence their followers (i.e., the individuals who engage in behavior consistent with these philosophies). If philosophical systems fail to control behavior of some individuals, they are not likely to survive.

In *Beyond Freedom and Dignity*, Skinner (1971) outlined the possibility of improving on current society through a scientific understanding of human behavior. Citing examples of current situations that do not work in a satisfactory way (or that work in a way that could be improved on), Skinner discussed the possibility of

improving the human condition through the use of his technology. Chiesa (1994) commented that, "Skinner consistently supported the view that a scientific understanding of human affairs would go a long way toward unraveling and finding solutions for the innumerable and complex social problems facing the modern world" (p. 7). L. D. Smith (1992) also commented on Skinner's affinity for technology that could be employed to improve the world. This admiration of technology is in line with that of Francis Bacon, who, Smith commented, "presciently embraced technology as a means to not only 'relieve human suffering' but also as a source of greater knowledge" (p. 217). Applications of such technology were outlined in a purely hypothetical sense in *Walden Two* (Skinner, 1948/1976) and were applied in the Twin Oaks community and other *Walden Two*-inspired experiments in cultural design (e.g., the Los Horcones community).

In the creation of intentional communities such as Twin Oaks and Los Horcones, behavioral principles were applied to develop egalitarian societies. Kat Kincaid, the founder of Twin Oaks, read *Walden Two* and was taken by the idea of trying to make this system work. Inherent in this process was a pragmatic worldview in which useful working was the criterion for evaluating ideas; when something did not work, changes were proposed and adopted and problem-solving behavior could emerge (Kincaid, 1994). Likewise, the community of Los Horcones adopted an experimental approach to culture, adjusting practices as successes and failures arose (*Brief History of Los Horcones*, n.d.). With an understanding of what is effective (and, by comparison, what is not effective), it may be possible to determine the variables that control "workingness." This ultimately allows the possibility of making changes so

useful working (the pragmatic criterion for truth; James, 1907/1963) is maximized.

Furthermore, the discipline of applied behavior analysis was established as a means to improve conditions in society. Whereas Twin Oaks was established as a societal-level vessel of change, applied behavior analysis began as a means by which the lives of individuals could be improved. Wolf (1978) commented on the birth of the *Journal of Applied Behavior Analysis (JABA)*, crediting Don Baer with the following statement of purpose: "[*JABA*] is for the publication of applications of the analysis of behavior to problems of social importance" (p. 203). Thus, the journal was established to provide a venue to present research in which socially significant change was demonstrated using the principles and methods that were, to a large extent, informed by radical behaviorism. The focus of such research, and the outcomes thereof, have, then, focused on improving the lives of individuals and improving the conditions of human life.

Similarly, Buddhism promotes improvement of the world. This improvement comes not through an experimentation-driven approach but through an approach based in mindfulness, as described above. The practice of mindfulness meditation may be considered a process of shaping behavior (Hanh, 1975). The target behavior in mindfulness meditation is the generation of compassion and love for all sentient beings. As noted previously, such mindful behavior is central to the Buddhist philosophy, and is prescribed in the Eightfold Path as a proper way to live. Although not entirely selfless (there are perhaps reinforcing characteristics associated with generating such feelings and tacting them appropriately) this practice may be salient enough in the life of the practitioner that social change may result. Being aware of the impact of

the actions of one's self (or, in a more behavioral interpretation, being able to tact the contingencies that the individual is establishing for others) may lead to improved social interactions and, ultimately, improvement in the human condition. The improved human condition, according to Buddhist philosophy, results from the practice of the Eightfold Path and through the attainment of nirvana at the level of the individual. Related to this point, it is interesting to consider a group of individuals recognized in Buddhism who are called *boddhisattvas*. The *boddhisattva* is a sentient being that has the opportunity to advance to nirvana. Instead of escaping the suffering of life and achieving nirvana, these individuals opt to remain in the present world, meditating and praying until all sentient beings have reached nirvana. Such a commitment to the greater good could be conceptualized behaviorally as an ultimate self-control response (cf. Green & Myerson, 2004). Through their devotions, *boddhisattvas* attempt to bring about vast changes for all sentient beings. Following sufficient change in the lives of individuals, the human condition as a whole may be improved.

Despite the fact that both Buddhism and radical behaviorism prescribe particular philosophies, both potentially allow an openness to change among their followers. Such change can be achieved, according to the radical behaviorist position, through the construction of relevant contingencies. Skinner (1987) commented, "The world we live in is largely a creation of people, and nowhere more so than in the West" (p. 18). Here it seems that Skinner was optimistic that contingencies that control behavior at a societal level are malleable. If the relevant contingencies are properly manipulated, it is possible to effect desirable change.

Buddhism provides an openness to change in a different sense. Ratanakul (2002) and Ricard and Thuan

(2001) suggested that Buddhists may have a scientific way of thinking in which self-examination is required. Here, science is taken to mean the search for observable order through systematic, rigorous questioning, as mentioned earlier in this paper. Thus, the process of questioning the truth by which one lives is encouraged in a Buddhist life, in a similar way as those individuals who live in Twin Oaks or Los Horcones could have experimental control over their own lives. Because it is not divinely inspired, "Buddhism invites reasoned criticisms and objective analysis of its truths and verification of them by personal experience" (Ratanakul, p. 116). With Buddhism, there is a feedback loop between behavior and its consequences; behavior and consequences interact to improve the life of the individual. Within this framework, it is possible to constantly question the way life is being lived. In addition, the Buddhist philosophy and its underlying assumptions are open to questioning. Buddhism does not require the protection of Gould's (1999) NOMA. This openness to scrutiny seems foundationally similar to the scientific method of posing questions and developing experiments to find answers to them. Said differently, the contingencies in effect may be constantly analyzed and adjusted to most efficiently achieve the desired goals. As an endorsement of such constant evaluation, Hanh (2002) warned, "If you get caught in an idea and consider it to be the truth then you miss the chance to know the truth" (p. 10). Perhaps this lesson would be appropriate for scientific pursuits, as well.

## CONCLUSION

Although they have different origins and focus on different subject matter, radical behaviorism and Buddhism are similar philosophical entities in several respects. Buddhism can be conceptualized as the philosophy

behind a science with an emphasis on the inner life of the human being. Radical behaviorism can be conceptualized as the philosophy that underlies the science of behavior analysis. Both of these philosophies present functional means for improving the human condition, even if they diverge structurally on the meaning of this phrase (e.g., individual enlightenment vs. broad social change, the possibility of free will vs. a deterministic worldview). In discussing comparative psychology, Sidman (1960) observed that behavioral differences between organisms are easy to find. Far more interesting from the standpoint of constructing a science of behavior, Sidman continued, was the fact that, despite the differences, morphologically disparate organisms often respond similarly to contingencies of reinforcement. Understanding these behavioral similarities, he argued, is a better basis for developing a broad understanding of behavior. So it may be with seemingly disparate philosophical systems. Analysis of how radical behaviorism and Buddhism interrelate not only may lead to a better understanding of both but also provides a model for relating radical behaviorism to other seemingly disparate philosophical systems.

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