The Bonobo and the Behaviorist: Frans de Waal's Bottom-Up Morality

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Abstract This review considers Frans de Waal's *The Bonobo and the Atheist: In Search for Humanism Among the Primates* (2013) from a behavior-analytic perspective. In his book, de Waal asserts evolution as the predominant level of selection for moral behavior, denies the possibility of a prescriptive science of morality, and misrepresents the science of behavior analysis. We expand upon de Waal's analysis and incorporate operant and cultural levels of selection of moral behavior. We also address the distinction between facts and values and describe behavior-analytic interpretations of belief. In addition, we briefly discuss the possibility of developing a behavior-analytic science of moral behavior.

Keywords Altruism · Behaviorism · Morality · Pragmatism · Values

In *The Bonobo and the Atheist: In Search of Humanism Among the Primates* (de Waal 2013), primatologist Frans de Waal attempts to usurp religion as the prevailing source of moral behavior, and replace it with our evolutionary history as social animals. To support his thesis, de Waal offers evidence from our primate relative, the bonobo, who regularly demonstrates moral behavior in the absence of religion. Throughout the book, de Waal emphasizes our continuity with other species, insisting that we should approach morality from the “bottom up” as a product of evolutionary history rather than something imposed by divine sources. In doing so, he suggests that, “[w]e started out with moral sentiments and intuitions...Rather than having developed morality from scratch through rational reflection, we received a huge push in the rear from our background as social animals” (p. 17). De Waal frequently relies on these “sentiments and intuitions” as the anchors by which all moral principles are grounded, eventually concluding that “[m]oral law is not imposed from above or derived from well-reasoned

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principles; rather, it arises from ingrained values that have been there since the beginning of time” (p. 228).

De Waal’s evolutionary approach to morality is compatible with a behavioral worldview, including the philosophy of radical behaviorism and the assumptions that underlie the practice of behavior analysis. According to behavior analysts, in addition to evolutionary processes, moral behavior is the product of ontogeny (i.e., differential history of social reinforcement and punishment within a species; cf. Skinner 1966), and culture (i.e., the practices maintained by a group across generations). Although de Waal identifies the significance of phylogeny in selecting behavior, he fails to incorporate the equally significant ontogenetic and cultural components. At times, however, de Waal briefly alludes to these influences, asking, “What if morality is *created* [emphasis added] in day-to-day social interaction, not at some abstract mental level?” (p. 23) and, in an earlier work, he suggested, “a prescriptive rule is *born* [emphasis added] when members of a group learn to recognize the contingencies between their own behavior... and act so as to minimize negative consequences” (de Waal, 1996, p. 90). In quotes such as these, de Waal directly acknowledges that morality neither exists from the beginning of time, nor comes from within, but rather, that it arises from continuously evolving social and environmental contingencies.

The aforementioned quotes suggest that the discrepancies between de Waal’s interpretation of how behavior is selected and the position of behavior analysis might just be an issue of semantics. Behavior analysts distinguish between ontogenetic, cultural, and phylogenetic levels of selection, whereas de Waal appears to categorize everything as part of the phylogenetic level. De Waal recognizes that selection occurs at the individual and cultural levels, because he describes the reinforcement contingencies that are upheld by different cultures, but he does not differentiate this type of selection from that which acts on the species as a whole. In behavior analysis, each level of selection is distinguished for analytical purposes, but they involve essentially parallel processes (Skinner 1975b). For instance, rats proficient in climbing can be selectively bred until an offspring is produced with much stronger climbing capabilities than its ancestors (phylogenetic selection). An equivalent result can be demonstrated when a rat is taught to climb higher through the reinforcement of successive approximations (ontogenetic selection). Skinner also noted that even operant conditioning itself is an “evolved feature of an organism” and it may depend on “a physiological system that had already been developed in natural selection” (Skinner 1975b, p. 120).

In addition to downplaying the importance of ontogeny and culture in determining morals, de Waal renounces science as a means to develop prescriptions for moral action. He instead remains, “profoundly skeptical of the moral purity of science, and feel[s] that its role should never exceed that of morality’s handmaiden” (p. 22). That is, de Waal “believe[s] that biology [science] helps us understand why morality looks the way it does. But to go from there to offering moral advice is a stretch” (p. 19). To illustrate this point, he provides a few analogies, as follows:

This is a bit like thinking that a celebrated art critic must be a great painter or a food critic a great chef. After all, critics offer profound insights in regard to particular products. They possess the right knowledge, so why not let them handle the job? A critic’s specialty, however, is post hoc evaluation, not creation. And creation takes intuition, skill, and vision. Even if science helps us appreciate

how morality works, this doesn't mean it can guide it anymore than that someone who knows how eggs should taste can be expected to lay one. (p. 23)

Certainly, a critic's specialty is post hoc evaluation, just as a pragmatic approach to the goals of science in behavior analysis (e.g. Lattal and Laipple J. S 2003) entails the successful prediction and influence of behavior, which cannot be evaluated until *after* the behavior has (or has not) been emitted (Hayes and Brownstein 1986). For behavior analysts, the ability to predict and influence behavior is necessarily found in the history of the behaving organism. Like de Waal, Staddon (2004) recognized that this reliance on historical data limits the prescriptive capabilities of scientists in general, and admonishes scientific imperialism due to the inherent unpredictability of the long-term effects of certain cultural practices. It is important to note, however, that behavior analysts are limited to the same extent as other pragmatic scientists in their ability to evaluate natural phenomena (Mach 1960). Although the evaluation is conducted post hoc, this does not inhibit behavior analysts from creating informed predictions as to which stimuli will be reinforcing for particular organisms, nor does it prevent pragmatic scientists from predicting and influencing behavior.

De Waal also condemns the argument set forth by Sam Harris (2010) in his book *The Moral Landscape*. Harris suggested that science can guide morality, provided that the well-being of conscious creatures is properly defined and established as the most fundamental concern of morality. For behavior analysts, defining such a term might involve examining it as a function of the conditions in which it is commonly used (Diller and Nuzzolilli 2012; Schlinger and Normand 2013; Skinner 1945). Just as physicists have relied on functional definitions to effectively explain the behavior of matter, behavior analysts tend to employ such definitions in explaining the behavior of organisms. That such definitions are open to revision poses no more threat to an emerging science of morality than it does to science in general, and in no way compromises the veracity or utility of using such definitions for the rest of the scientific verbal community. Pragmatic scientific knowledge is never absolutely true or false, but rather more or less effective, to the extent that it allows the scientist to organize his observations as economically as possible (Rachlin 1992; Skinner 1945; Zuriff 1980). For example, in physics, the meter was initially defined by the length of a metal bar stored under special conditions in France until it was discovered that length of the bar could change depending on its temperature. This discovery led the meter to be redefined more reliably by the speed of light. Harris (2010) also pointed out that we are free to define science, in general, however we want, but that there are better and worse ways to define terms, and some definitions will be more useful than others. For pragmatists, science is essentially a process of classification. If such an approach to morality were established in the scientific verbal community, a science of morality would become just as feasible as any other science.

Throughout his book, de Waal misinterprets fundamental concepts from behavior analysis, especially reinforcement. For behavior analysts, reinforcement is defined functionally, meaning that a broad array of consequences may function as reinforcers,

so long as the behavior preceding their occurrence is strengthened (Skinner 1953). As de Waal appears to understand it, reinforcers consist exclusively of food:

In an experiment at the University of Chicago, a rat was placed in an enclosure where it encountered a transparent container with another rat. The rat was locked up, wriggling in distress. Not only did the first rat learn how to open the little door to liberate the second, but its motivation to do so was astonishing. Faced with a choice between two containers, one with chocolate chips and another with a trapped companion, it often rescued its companion first....The finding is about as contrary to the Skinnerian emphasis on conditioning as possible, and a testimony to the power of animal emotions. (pp. 142–143)

Because the histories of reinforcement for the particular rats in this study are unknown, de Waal mentalistically attributes the act to “animal emotions.” In this case, de Waal mistakenly assumes that for the rats in this study, food is necessarily a more potent reinforcer than the removal of a suffering companion. If the liberation of a suffering companion serves as a more powerful consequence than the consumption of chocolate chips (as it appears here), no behavior analyst would be surprised to find the rat freeing his companion instead of eating the chocolate chips. In other words, provided the learning history of the rat, this finding is about as congruent with the Skinnerian emphasis on conditioning as possible, and a testimony to the power of reinforcement contingencies. Unfortunately, six decades later, “It is still commonly believed that reinforcers can be identified apart from their effects upon a particular organism” (Skinner 1953, p. 72).

Another instance of the misinterpretation of consequences is found in de Waal’s reduction of the circumstances described in heaven and hell to “an almost Skinnerian fondness of reward and punishment” (p. 18). Here again, de Waal presents the behavioral perspective as a process involving simple, easily identifiable consequences. He seems to assume that heaven universally functions as a reinforcer, while hell always functions as a punisher. In fact, the putative reinforcing potency of heaven and punishing effects of hell are identified analogously with respect to the contingencies upheld by a given community (Malott 2001). The control of moral rules, which specify “social, religious, or supernatural outcomes” (Malott 2001, p. 2), entails the production of aversive conditioned stimuli, even in the absence of any clear immediate punishers. Such control requires the continuous efforts of clergy and other community members to convince others that noncompliance with moral rules will result in deferred punishment (e.g., hellfire).

Of course, an organism can never actually contact the direct effects of heaven and hell within its lifetime; nevertheless, rules regarding heaven and hell have been examined in behavior analysis as analogs to aversive consequences. For example, Malott (2001) explained the roles of heaven and hell as deferred “supernatural outcomes” from which moral rules may be generated. As such, moral rules “control sins of commission...when they are stated as analogs to punishment. And they control sins of omission...when they are stated as analogs to avoidance” (p. 6). Malott suggested that, “moral control is exclusively, or almost exclusively, aversive control. In the case of religion, that aversive control uses rule-governed analogs to punishment and avoidance. Hell...is the aversive condition to be presented, and Heaven...is the paradise to be lost”

(p. 6). Although heaven and hell cannot directly have effects on an organism (as they are supernatural), they may be treated as ultimate or deferred consequences that derive power from the verbal behavior related to them. The reinforcing potency of such consequences is facilitated by more proximate contingencies upheld by the members of the verbal community (e.g. parents, clergy). In this way, moral behavior can be maintained by social contingencies.

Altruism and Empathy

For de Waal, morality is largely synonymous with altruism, which he defines as “behavior that costs you something... while it benefits another” (pp. 27–28). He cites maternal care as “the prototypical example of altruism” in mammals (p. 50), and believes that altruism is ultimately rooted in the emotion of empathy, the whole point of which “is a blurring of the line between self and other” (pp. 32–33). Expanding on this notion, de Waal suggests that genuine altruism “lacks ulterior motives” (p. 48) and he claims it is “the exact opposite of being driven by incentives” (p. 49). Despite downplaying the role of consequences in shaping behavior, he subsequently emphasizes the rewarding feelings associated with helping others, effectively demonstrating that “[d]oing good feels good” (p. 49). To explain the nature of these feelings, de Waal conceives an “altruistic impulse” harbored within mammals, which enables them to act selflessly. In presupposing the existence of such an innate tendency, de Waal easily shifts back to his main thesis: moral laws “arise from ingrained values,” in a loop of circular logic.

With empathy as the primary source of altruism in de Waal’s argument, we observe a point of correspondence with a behavior-analytic perspective. In behavior analysis, one way in which empathy can be understood is as part of the context in which altruism occurs. Peláez (2001) suggested that,

empathy may work as a setting event or establishing operation. It refers to a vicarious emotional response signaled by another’s emotional cue and responses. Therefore, showing altruistic behavior, self-sacrifice behavior, or helping in the presence of another person’s distress, often times is facilitated by empathy working as an establishing operation. (Peláez 2001, p. 12)

In addition to functioning as an establishing operation, empathy itself may be a product of histories of experience.

[Empathy] develops with the increasing understanding, through learning experiences, that the emotional cues of others are relevant and contextually determined... It is crucial that empathy is understood in terms of its emotional aspect and not become equivalent to the prosocial or moral responses it is presumed to motivate, that is, to serve as a setting factor. For example, pressing the lever faster is not equivalent or the same as the rat being hungry. (Peláez 2001, p. 12)

As an explanation, this environmental account of empathy is quite useful, as it allows for further explication and manipulation of the variables responsible for empathic responses.

To the extent that morality is a label for socially beneficent behavior, de Waal's view is very much the same as that of most behavior analysts. Unlike de Waal, however, who sees no incentive for such behavior, behavior analysts understand that altruism is just like any other form of behavior and, therefore, equally subject to the processes of reinforcement, stimulus control, and so on. Wood (1979) reminded us, "Behavior is behavior, whether labeled scientific or ethical or unscientific or unethical" (p. 11). Altruistic behavior is no exception to this, and where de Waal inserts an "altruistic impulse" as an explanation, he relies on mentalism, which can obscure the identification of controlling variables in the environment by focusing on internal characteristics (cf. Skinner 1977). From a pragmatic point of view, establishing inner values as foundational moral bedrock is more useful than appealing to an omniscient god, which de Waal rallies against in his argument that morality comes from our evolutionary past. The implication of altruistic impulses prompts inquiry into a more natural domain, but values alone are not the most practical starting point in a true "bottom up" approach to morality. De Waal's position is untenable as it depends on the assumption that values and emotions can function as initiating causes of (altruistic) behavior, and furthermore, that they lie beyond the scope of science. His appeal to inner values as a moral locus is essentially an appeal to mentalism, and in turn, begs the question (cf. Baum 2005; Schlinger 2004; Skinner 1953).

For behavior analysts, a more appealing approach to explaining altruism would be explaining the reinforcing efficacy of the by-products of helping other people. That is, after engaging in altruistic behavior, individuals are often praised or receive other forms of social reinforcement. Skinner (1975a) stressed the survival value of helping others, and that we learn to help others or "do good" because of the consequences that follow. He suggested that it is sometimes less aversive to help people than to tolerate their helplessness, and that we often help those most likely to reciprocate. Like de Waal, Skinner revered maternal care as an ideal example of altruism, and suggested that it is adaptive due to a "genetic susceptibility to reinforcement" (Skinner 1975a, p. 623). Organisms that are susceptible to environmental consequences are more likely to survive than those that are not.

Mammals exhibit a powerful phylogenetic basis for empathy. However, the behavior of the organism remains dependent on complementary cultural and ontogenetic contingencies:

The capacity for empathy may be a deeply rooted, biologically based, feature of human motivation... Even so, a biologically based empathetic capacity might be specific to particular individuals, in particular contexts of specific relationships, in different cultures, and at different stages of our lives. The role of empathy, as an establishing operation, could derive from aversive controlling histories. In this way, empathy is both biologically and contextually determined. (Peláez 2001, p. 13)

Again, behavior analysts understand that through the evolution of our species as social animals, we are biologically prepared to develop a capacity for empathetic behavior. However, empathy does not develop exclusively from this phylogenetic history; it is also informed by events that occur within the organism's life span. Indeed, it is possible to explicitly train empathetic responding using techniques such as

modeling and prompting (e.g., Schrandt 2009). In behavior analysis, empathy may be viewed as a state in which an organism's behavior will be more readily reinforced by the removal of another's distress or by engaging in altruistic behavior.

Alternatively, altruistic and empathic behavior may be mutually reinforcing, in that negative reinforcement may exist for both the person being helped and for the person helping. For the individual receiving the help, the problem they were experiencing is removed. For the helper, the aversive stimulus of seeing someone helpless is removed (cf. Skinner 1975a). Thus, for both parties, there is valuable reinforcement available. Here, we have a dynamic process, in which the repertoires of the parties interact with each other, similar to the environment-behavior interaction that occurs within the process of shaping (e.g., Peterson 2004). With the emphasis on natural phenomena as objects of study, behavior analysts may dismiss the mentalistic assumptions necessary in de Waal's argument.

Facts and Values

Along with the issue of mentalism, the role of values in influencing behavior is another point of departure between the behavioral perspective and the position presented by de Waal. In behavior analysis, facts and values are treated naturalistically, as being a part of the environment. Skinner (1971) reconciled facts and values by describing a fact as the way something is, and a value as the way someone feels about it, which, in turn, is just as factual as the former. For example, consider a painting of a bird. One statement about that painting (e.g., "It depicts a peacock") could be considered a fact. If someone says, "That painting is beautiful," we have a statement about the value of the painting, or a statement about how the viewer feels about the painting. But, since the value is also an instance of verbal behavior, it is also factual (i.e., natural events amenable to a scientific analysis). Leigland (2005) described values as "a function of certain variables found in environment-behavior interactions" (p. 134). When viewed in this context, values no longer need to be treated as internal or transcendental, but simply as the reinforcing effects of given stimuli.

According to Skinner (1971), values essentially reduce to reinforcers and may be classified into three general categories: (1) stimuli that are directly reinforcing (e.g., food, sex, comfort), (2) behaviors that are conventionally approved of, and reinforced by a given community (e.g., honesty, patriotism, etiquette), and (3) deferred reinforcement that promotes the survival of a given culture (e.g., scientific behavior, environmental sustainability).

With values in the natural environment, they can then be studied scientifically. The products of different environment-behavior interactions can be observed, and explanations can be offered when people feel differently about the same facts. Skinner (1971) explained such discrepancies as a conflict of value judgments. A value judgment is a type of verbal moral injunction or rule (self-generated or generated by others) that can be translated into a conditional statement about the reinforcing effects of a given stimulus (Baum 2005; Skinner 1971). Such rules typically include the terms "should" or "ought" and may be more or less explicit, accurate, and complex (Peláez 2001). For example, "You should (ought to) be honest" is a value judgment because a

reinforcing contingency (although not explicitly mentioned) can be inferred and translated as, “*If* the approval of your peers is reinforcing to you, *then* your honesty will be reinforced.” When a value judgment is translated as such, the prescriptive obscurity of it is removed, and we are left with only an empirical statement. Where de Waal concludes his search for humanism with value judgments, the behaviorist is just beginning.

Superstition and Belief

In his consideration of beliefs and superstitions, de Waal relies heavily on mentalistic terminology, which is problematic due to its dualistic nature and inability to be falsified (cf. Schlinger 2004). De Waal claims that, “Superstition blurs the line between reality and imagination as does religion and a belief in God” (p. 202). As an example of superstition, he explains how certain nonhuman primates are capable of engaging in “pretend play” behavior, in which a female bonobo is observed carrying and cradling a small wooden log “as if it were a newborn” (p. 203).

In the old reality, a wooden log is just a log, whereas in the new one, it’s a baby. This capacity for dual reality is so highly developed in our own species that a sugar pill improves our health even if the nurse takes it out of a bottle with “placebo” clearly written on it. On one level, we know the pill is fake; on another, we still believe it will work. (pp. 203–204)

Extrapolating his reasoning to the position of neoatheists (e.g., Richard Dawkins, Sam Harris, Christopher Hitchens), in which empirical reality takes primacy over religious positions, de Waal suggests that such a stance is to “deny humanity its hopes and dreams” (p. 204). He compares neoatheists to “people standing outside a movie theatre telling us that Leonardo DiCaprio didn’t really go down with the *Titanic*” (p. 204), and concludes that, “Some realities exist, others we just like to believe in” (p. 204).

Here, de Waal is directly asserting the existence of multiple realities, and consequently equivocating what it means to believe something. When describing religion and a belief in god, de Waal suggests that “god’s existence is an absolute certainty for many” (p. 202); however, when describing the human capacity for dual reality, he states that it is possible to “believe” something is real, and simultaneously “know” it is fake. In one instance, “belief” is equated with knowledge and in another it is equated with wishful thinking.

An alternative approach to belief can be found in Skinner’s (1953) rejection of the distinction between appearance and reality. We need not impose multiple realities in order to account for two different responses to the same stimulus (e.g., treating a wooden log as if it were a newborn baby). As Skinner (1953) put it:

What happens when an organism responds “as if” a stimulus had other properties? Such behavior seems to indicate that the “perceptual” world...is different from the real world. But the difference is actually between the responses—between the responses of two organisms or between the responses of one organism under different modes of stimulation from a single state of affairs.

Thus...I may “think” [believe] that an object is square only to find when I shift my position that it is not...There is no reason to regard the first...reactions as “perceptual” and the second as a form of contact with the real world. They are different responses made at different times to a common source of stimulation... Responses to some form of stimulation are more likely to be “right” than responses to others...but any suggestion that they bring us closer to the “real” world is out of place here. (Skinner 1953, pp. 138–139)

Whether the bonobo actually “believes” the wooden log is a newborn baby or that those of devout faith “believe” in the existence of god is of little concern in behavioral science. The point is not whether the actual source of stimulation is different, but that the organism’s response to it is different. As Skinner (1953) wrote: “Our ‘perception’ of the world—our ‘knowledge’ of it—is our *behavior* with respect to the world. It is not to be confused with the world itself” (p. 140; italics in original). In a word, belief is behavior.

In a challenge about explaining belief without supernatural intervention, de Waal posits, “I’d love to hear an atheist perspective on what makes a good religion or why different religions lead to different morality” (p. 90). Skinner (1987) and Baum (2005) provide a start to an answer to the first part of de Waal’s challenge: survival of cultural practices may be one judge of their goodness. That is, practices that continue are likely advantageous to their practitioners—or, at a minimum, they are not disadvantageous. Baum wrote, “Survival as a standard implies not only change, but change in response to long-term relations” (2005, p. 288). From a selectionist point of view, survival of a particular practice makes it good, in that it is successful in its environment. Here, no supernatural intervention is required to explain this relation.

The answer to the second part of de Waal’s challenge is just as straightforward as the first. Different religious traditions (and hence different moral rules) emerge in different populations because of different social environments. Glenn (1988) defined metacontingencies as “the unit of analysis encompassing a cultural practice, in all its variations, and the aggregate outcome of all the current variations” (p. 168) and suggested that they can be used as a tool to understand the process of cultural selection. She described the role of metacontingencies in the evolution of cultural practices, where different sets of metacontingencies emerge from, and subsequently generate, different social environments. Anthropologist Marvin Harris (1974) described the cultural conditions that lead individuals within different religious traditions to favor (or despise) particular foods. For example, Harris explained that the cultivation of pigs in desert environments is not sustainable because of the conditions that pigs require (e.g., shade and humidity) to thrive. He proposed that the cultural ban on such meat products was an adaptive strategy used by desert-dwelling people to promote their survival. A similar analysis could be applied to the question of morality, and behavior analysts may be uniquely positioned to take on this task.

Behavior Analysis and Morality

The discipline of behavior analysis has an extensive history of contributing to a scientific understanding of moral behavior (e.g., Baum 2005; Leigland 2005; Peláez

2001; Ruiz and Roche 2007; Skinner 1971). Behavioral science is not only well suited for the task of understanding our morals or values, it actually helps substantiate some of de Waal's arguments. As Skinner (1971) wrote, "to the extent that it is concerned with operant reinforcement, [behavioral science] is a science of values" (p. 104).

Despite the differences that we have outlined above, de Waal does present arguments that are consistent with a behavioral approach. For example, one commonality with behavior analysis is a denunciation of dogmatism. De Waal writes, "The true enemy [of science] is the substitution of thought, reflection, and curiosity with dogma... Convictions never follow straight from evidence or logic. Convictions reach us through the prism of human interpretation" (p. 109). If "the prism of human interpretation" is taken to mean "highly complex, learned verbal relations" this statement is compatible with behavior analysis. Indeed, the eschewal of absolute conviction is one of the cardinal virtues of the basic scientific method. Some behavior analysts espouse the philosophy of science known as *functional contextualism*, which is almost exclusively devoted to the avoidance of such absolute knowledge (Hayes 1993). Likewise, Skinner (1987) rejected dogmatism in place of intellectual honesty, suggesting that, "[i]t is better to go without answers than to accept those that merely resolve puzzlement" (p. 12).

The answers provided in religious texts appear to resolve puzzlement for many, but not for de Waal. For him, as for behavior analysts, morality is entirely natural. In fact, aside from his use of mentalistic terminology, de Waal's naturalistic ethics are sometimes shockingly similar to those of Skinner:

In sum, two great reinforcers support the social code by which primates and children live. One comes from within and the other from without. The first is empathy and a desire for good relations leading to the avoidance of unnecessary distress. The second is the threat of physical consequences, such as penalties meted out by higher-ups. Over time, these two reinforcers create an internalized set of guidelines, which I will call *one-on-one morality*. (de Waal 2013, p. 160)

Upon translating the mentalism, a striking parallel may be observed between de Waal's approach and that of behavior analysts. The first of de Waal's "reinforcers," the one coming from within, may be taken as the phylogenetic selection resulting in the primate's tendency to be reinforced for helping others, while the second might refer to the ontogenetic and cultural contingencies (e.g., rules) which work to shape the behavior of the individual. As suggested by de Waal, these components combine to create "one-on-one morality." Behavior analysts instead suggest these components combine at the locus of the individual organism, and are expressed as behavior. Skinner (1980) also recognized the interdependence of these processes.

An emotional disposition to be nice to those who are nice to us is presumably part of a genetic endowment. But what were the contingencies of survival that selected that endowment? Could it not be that this is another example of ontogenic contingencies being taken over by a phylogenetic mechanism? A built-in tendency to be nice to those who are nice to one would have survival

value in increasing the number of nice things done. (I am assuming, of course, that by nice I mean ultimately biologically good.) (Skinner 1980, pp. 249–250)

Both de Waal and behavior analysts agree that the source of morality is ultimately natural, but discrepancies may still exist between how morality is defined.

Questions of right and wrong appear to be a perpetual source of conflict and confusion. Moral disputes arise when two or more individuals have conflicting value judgments, which involve the classification of stimuli in terms of their reinforcing effects (Skinner 1971). However, because reinforcers cannot be identified separately from their effects upon a particular organism, the same stimulus may evoke more or less distinct responses from different individuals; thus, value judgments, when stated objectively (i.e., applicable to individuals other than the speaker), will naturally and inevitably conflict with one another to some degree, unless the individual parties share similar learning histories. This is observed most notably when comparing the values of individuals from drastically different cultures. Still, the question remains: which value judgments are correct?

Baum (2005) suggested that when the answer to a question in no way affects the manner in which science would proceed, pragmatists begin to suspect the question itself, and no longer attend to it. Similarly, William James (1907/1963), one of the founders of pragmatism, described pragmatic philosophy as “a method of settling metaphysical disputes that otherwise might be interminable” (p. 43). Because advances in behavior analysis are largely driven by this pragmatic basis for action, it follows that such an approach might be appropriately applied to questions of morality, namely, by dismissing questions of the objective truth of a given value judgment.

This is not to say a position of moral relativism is necessary in behavior analysis. Rather, this proposal is analogous to Barnes-Holmes’s (2005) consideration of the realism controversy, in which behavioral pragmatism is described not as antirealist, but rather *a-ontological*. By analogy, behavioral pragmatism is not morally relativistic, but rather *amoral*, in the sense that there is no need to entertain ontological matters of right and wrong, thus negotiating the “philosophical quagmire” generated by notions of absolute moral objectivity. This amorality of behaviorism is useful in that it allows the discipline to focus on questions beyond what is *good* or *bad*. Instead, it can take a functional approach, identifying conditions under which particular behaviors occur and identifying ways to strengthen the behaviors that are considered desirable, independent of their moral standing. If a child with autism engages in self-injurious behavior, we do not need to ask whether such behavior is truly “bad,” nor should we. The behavior can be considered as a behavioral excess, and treated as such. We must begin with the assumption that behaviors leading to misery are undesirable and those leading to flourishing are desirable, and from this starting point, the job of science would be to allow scientists to determine which behaviors lead to flourishing, and to most effectively reinforce those behaviors (Harris 2010). In this way, the behavioral science of morality is driven by data just as much as physics or any of the other natural sciences.

Of course, moral disputes are of greater consequence than “arguing over the shadow of an ass,” as the realism controversy has been described (Barnes-Holms 2005, p. 77). For this reason, some authors (e.g., Ruiz and Roche 2007) have suggested that we turn

to the work of pragmatist John Dewey, and his notions of integrating communities through free (noncoercive) and open discussion as a working guide.

As behavior analysts endeavor to build a coherent system from which to promote effective cultural practices, we recognize that as pragmatists, we are not searching for solutions that are ultimately “true” or “right.” We are instead making decisions about the best possible courses of effective action...we may do well to recall Dewey’s notion of community. (Ruiz and Roche 2007, p. 14)

Such an approach is conducive to promoting well-being for a greater amount of people across a greater variety of cultures. Ruiz and Roche (2007) wrote, “Dewey’s emphasis on pluralism rejects excluding particulars from the multiplicity of “goods” without first engaging in strenuous effort at understanding the perspective of the “other.”...cooperative dialogue can lead to open communities that broaden themselves in the process” (p. 14).

It is also suggested that “we seek wider sympathy through dialogue rather than narrowing the context of debate to the solitary individual or scientist working towards personal private goals” (Ruiz and Roche 2007, p. 14). By including different perspectives in conversations of morality and placing consensus as the prevailing source of authority as a basis for action, we effectively preclude conflicts that might otherwise arise from more parochial methods of operation.

It should be noted that Dewey’s emphasis on pluralism also dovetails neatly with de Waal’s notion of “community concern” which he considers a moral capacity exclusively accessible to humans:

We [humans] care intensely about the group level and develop notions of right and wrong for everyone around, not just ourselves and our close relations...The underlying values are, again, not that complicated, because surely the functioning of a community is in the interest of all of its members. (p. 234)

The ideal setting in which moral behavior is to flourish would be a community of people who feel free and happy. In behavior analysis, it is generally understood that freedom and happiness are directly correlated with one another (Baum 2005). Behavior is invariably under the control of both positive and aversive measures. However, people report feeling free when their behavior is under less control from aversive measures (i.e., punishment). Therefore, in order to help establish a community of happy people, and collaterally promote moral behavior, people’s behavior must be under the control of nonaversive measures (i.e., reinforcement). Indeed, section 4.08 of the ethical code of the Behavior Analyst Certification Board (BACB), the *Professional and Ethical Compliance Code for Behavior Analysts*, compels behavior analysts to implement “reinforcement rather than punishment whenever possible... If punishment procedures are necessary, the behavior analyst always includes reinforcement procedures for alternative behavior in the program” (Behavior Analyst Certification Board 2014, p.12). We should note, however, that even reinforcement-

based approaches also contain elements of aversive control. Perone (2003) suggested that positive reinforcement “may also be regarded as an escape from relatively aversive conditions” (p. 7). He describes a study conducted by Jwaideh and Mulvaney (1976) and work from his own lab (e.g., Perone and Courtney 1992) in which stimuli associated with schedules of positive reinforcement (here, the contingent delivery of food) suppressed responding. Perone wrote, “Our chief concern should *not* be whether the contingencies involve the processes of positive reinforcement, negative reinforcement, or punishment. Instead, we should emphasize the ability of the contingencies to foster behavior in the long-term interest of the individual” (p. 13, italics in original).

A common way to reduce behavior without using punishment is differential reinforcement. This technique could potentially be extended to immoral behavior. If a behavior is considered immoral, it need not be punished; rather, it may be effectively reduced via reinforcement of alternative responses. Take, for example, the issue of drug use, which is prohibited in a variety of religious traditions and is considered immoral in certain communities. Contingency management, a technique in which a target behavior (here, abstinence) is reinforced with vouchers or the opportunity to win money prizes, is highly effective (e.g., Dutra et al. 2008). Indeed, behavior analysis has techniques available to reduce harmful behaviors including substance abuse (Alessi and Petry 2013; Andrade et al. 2012), medication non-compliance (e.g., Petry et al. 2015), and self-injurious behavior (e.g., Hanley et al. 1998). As part of our ethical underpinnings, behavior analysts require the use of effective interventions (cf. Van Houten et al. 1988).

Given the field’s history of developing effective interventions for behavioral excesses, it is conceivable that we have a set of tools that could be applied to other types of problem behaviors that could be considered immoral. The first step of this process would be an analysis of the consequences that maintain the particular response so a functionally equivalent alternative could be substituted. Using differential reinforcement techniques, behavior analysts could provide reinforcing functionally equivalent alternative (moral) responses, with extinction in place for the original (immoral) response. In the case of adultery, for example, the reinforcers might include intimacy, sex, and novelty—but, of course, the efficacy of these potential consequences would need to be directly assessed for each individual. Working within the existing partnership, it might be possible to create novelty via role playing or travel to new locations. If the adulterer’s partner is unwilling or unable to meet the needs of that individual, then perhaps other relationship structures could be considered (e.g., polyamory or consensual non-monogamy; cf. Easton and Hardy 2009). In this way, the individual who is likely to transgress might be able to find functionally equivalent reinforcers, potentially reducing the aversive consequences that they (and their partner) experience. With this approach, aversive measures are restricted, people experience more feelings of freedom and happiness, and thus, moral behavior may be more likely to flourish.

As a future direction of inquiry, behavior analysts could move into an experimental program of research on moral behavior. Here, the field could determine responses that are valued and identify ways to promote such moral behaviors. We could find effective action by moving beyond de Waal’s realm of inner forces and focusing on the environmental factors supporting moral behavior.

Conclusions

In his book, de Waal presents an explanation for moral behavior that relies heavily on our evolutionary history, discounting the necessity for divine influence of moral behavior. The general principle de Waal outlines is consistent with the approach that behavior analysts take to moral behavior. Namely, as behavior, morality is a natural phenomenon that is orderly and understandable through scientific inquiry. Where de Waal diverges from behavioral thinking is in his tendency to rely on mentalistic causes for moral behavior and structural (rather than functional) definitions of concepts like altruism and empathy. He also fails to appropriately emphasize the role of ontogenetic and cultural contingencies in the development of morality, and he misrepresents ideas from the discipline of behavior analysis.

Behavior analysts should be interested in this work, not only because it is interesting in its own right, but also because the misrepresentations of behavior analysis may spread in the popular press (cf. Todd and Morris 1992). Indeed, the BACB's ethical code suggests, "Behavior analysts have an obligation to the science of behavior and profession of behavior analysis" (Behavior Analyst Certification Board 2014, p. 14). Furthermore, the discipline of behavior analysis can offer compelling, scientific explanations of moral behavior. The field has the tools to describe, predict, and influence behavior of human and nonhuman animals. Expanding our repertoire to descriptive and experimental analyses of morality may be a fruitful endeavor for our field and for the broader society.

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