



Dissemination and its deprivation: extending the behavioral enlightenment

Robert C. Mellon

To cite this article: Robert C. Mellon (2015): Dissemination and its deprivation: extending the behavioral enlightenment, European Journal of Behavior Analysis, DOI: [10.1080/15021149.2015.1085219](https://doi.org/10.1080/15021149.2015.1085219)

To link to this article: <http://dx.doi.org/10.1080/15021149.2015.1085219>



Published online: 11 Sep 2015.



Submit your article to this journal [↗](#)



Article views: 2



View related articles [↗](#)



View Crossmark data [↗](#)

Dissemination and its deprivation: extending the behavioral enlightenment

Robert C. Mellon

Laboratory of Experimental and Applied Behavior Analysis, Department of Psychology, Panteion University of Social and Political Sciences, Athens, Hellenic Republic

ABSTRACT

In the emergence of radical behaviorism, the useful practice of challenging explanations grounded in tradition and faith by the methods of natural science was extended to our understanding of rationality itself, and the long-established view of thought and related acts as creations of an autonomous initiating agent was found to be as groundless and impotent as theistic accounts of the provenance of other physical events. This account of reasoning as a process of long-term interaction between the organism and the events that precede and follow upon its actions (many of them unobservable by others) has much to offer to each and every human being, yet the number of persons whose behavior is usefully affected by this approach is at present exceedingly small. Moreover, the individuals least likely to receive effective exposure to a natural science interpretation of such “cognitive” phenomena are, arguably, those who need it most: those who are troubled and limited by their own problematic patterns of thinking and perceiving. The provision of a useful account of “psychopathology” and its relation to aversive control could greatly advance the dissemination of the behavioral position in general, as these phenomena are alluringly enigmatic, universal, problematic, and less likely than other forms of behavior to be attributed to autonomous agency – constituting the thin edge of a wedge that would open the balance of the individual’s explanatory repertoire to scientific scrutiny.

ARTICLE HISTORY

Received 4 January 2015
Accepted 17 August 2015

KEYWORDS

Dissemination of behavior analysis; natural science interpretation; autonomous man; free will; private events; dysfunctional cognition; punishment

Just a few hundred years ago, the public understanding of the nature and provenance of astronomical, geological, and biological events was almost wholly composed of fantasies generated or espoused by religious authorities who claimed to possess special knowledge and power over such events in an occult realm, an assertion that contributed significantly to their control of resources in the earthly domain (e.g., Pagden, 2013; Russell, 1946). In the seventeenth and eighteenth centuries there emerged a public movement in the interpretation of the physical world, in which it was held that imagination unchecked by empirical validation was inherently harmful to community well-being, proposing in its stead the practices now known to us as the scientific

CONTACT: Robert C. Mellon  mellon.robert@gmail.com; mellon@panteion.gr

This article is based on a presidential address to the 7th Conference of the European Association for Behaviour Analysis, in Stockholm, Sweden, presented on September 11, 2014.

© 2015 Norwegian Association for Behavior Analysis

method in evaluating and developing our understanding of objects and events. In the course of the past century, this extraordinarily fruitful form of inquiry has been increasingly employed in testing the utility of widely held, fanciful beliefs about the nature and provenance of human conduct. Readers of this journal are likely to recognize below the opening lines of B. F. Skinner's *Verbal behavior*, and to cherish their promise that the world that is best understood by reason and empirical validation includes *everything about us*, including reason itself:

Men act upon the world and change it, and are changed in turn by the consequences of their action. Certain processes, which the human organism shares with other species, alter behavior so that it achieves a safer and more useful interchange with a particular environment. When appropriate behavior has been established, its consequences work through similar processes to keep it in force. If by chance the environment changes, old forms of behavior will disappear, while new consequences build new forms. (Skinner, 1957/2014, p. 1)

Alas, the fruits of our extension of the principles of the Enlightenment to the understanding of ourselves and others have yet to reach a deserving public, a public misguided in the vital affairs of everyday living by the half-truths and often well-meaning falsehoods revealed by folklore, theology, and essentialistic psychology. With arched eyebrows, we the behaviorally enlightened too often share expressions of exasperation for the misunderstanding and ignorance of our approach common to professional colleagues and members of the general public, in a manner that comfortably confirms our elite status without addressing the needs of the unenlightened – as if such misunderstandings were not natural phenomena within our area of expertise and social responsibility!

In a world that is often either hostile or unresponsive to our approach, each of us needs the support of our scientific community; but *within* our community we would do well to consider that enmity and indifference are *properties of behavior*, and that the widespread generation of a natural science interpretative repertoire of psychological phenomena is a problem for applied behavior science. As is true in any such problem, the first step in addressing it would be to consider what would maintain the emission probability of scientific interpretations *when the intervention that generates them ends* – that is, the “natural” reinforcers of such discriminative behavior once the interventional or “arbitrary” reinforcers (Ferster, 1967) are withdrawn.

The establishment of the reinforcing potency of the consequences of rational inquiry is, of course, necessary for the long-term effectiveness of the intervention. The events that reinforce the natural science interpretation of behavior are multitude and diverse, enriching accordingly the lives of the analyst and of those he or she counsels, but inconveniencing the analysis of the phenomenon itself. The best way to approach the characterization of these reinforcers might be for the behaviorist him- or herself to consider the personal benefits of a behavior-analytic interpretative repertoire.

The natural reinforcement of naturalistic interpretation

To most conveniently characterize the reinforcers of the scientific interpretation of the nature and provenance of behavior, I would ask the reader to think back his or her own introduction to radical behaviorism, to the time that the concept of the discriminated

operant first substantially affected his or her behavior. For some, this may be an easy task, something that might have occurred in the last year or two. For others the relevant events might be considerably more remote, but I would wager that they were so life-altering that they might be readily regenerated.

Think if you will of what issued from the realization, from the recognition, that our thoughts, our perceptions, our movements and expressions, the characteristics that compose our identity as well as those that we ourselves are unaware of, emerge in an ongoing, dynamic, temporally extended interaction between the organism and the physical events that precede and follow upon its actions. Think of what issued for *you*, personally, from the comprehension, from the generalized discrimination, that these most fundamental aspects of the human condition are explicable by the same sort of scientific investigation that has “*achieved safer and more useful interchanges*” with *other* aspects of the world we live in, such as the flash of lightning, the flow of water, and the growth of plants. Think what issued from the recognition that *nothing* is preternatural, that everything that can affect our behavior has the familiar properties of *things*, and that while all things that affect our behavior are physical, *most* of them occurred in the past, rendering their causal efficacy difficult to detect in the absence of scientific inquiry, and giving rise to a multicolored, pernicious, and persistent mythology of autonomous control over behavior by spectral non-entities and by parts of the behaving organism itself, such as its DNA or its central nervous system.

I ask you to think about these events because in programming for dissemination, it is worth remembering that nearly every behaviorist once had a very different perspective on the provenance of his or her own action tendencies. It is a very rare person who was not initially taught that the human being (or a spirit that inhabits it) is somehow capable of acting *independently* of its organic condition and the physical interactions that gave rise to its behavior and give rise to it still. We are more or less *all* taught that as regards our own comportment, each of us either is (or plays host to) something like a minor god; not a perfect or infallible God, not the Creator of all things, but still an *unseen* and *autonomous* source from which our thoughts and actions inevitably (if inexplicably) issue, the Unmoved Mover of a single human body, the Undirected Director of the things we do and imagine doing.

Now of course, not being composed of matter, there is not and cannot be any form of verification of the independent control over thought and action attributed to this ghostly agent, who is often called “mind” or “will” or “character” and whom B. F. Skinner (1971) called “autonomous man.” Yet in the world in which we *now* live, autonomous man’s unobservable ability to rise above his experiences and will the flow of neurotransmitter substances in the body that he inhabits is very nearly unquestioned, and provides the moral justification for the marginalization, imprisonment, torture, and execution of persons who misbehave. The dogma of autonomous control is the cornerstone of cruel and ineffective systems of education based on punishment for students’ freely chosen failures to learn as demanded. And it provides the moral justification for terrifying children and other innocents with the horrific consequences of failures to *will their own behavior* in accordance with the revealed wishes of their otherwise benevolent creator, whom they cannot see but who can and does observe everything that they do (and even *think* about doing).

Autonomous man has lately appeared to put on weight, in the form of vague references to the self-sufficient power of the brain, or to the executive authority of the twisted strands of proteins in our cells, but in his traditional and as yet more popular guise, autonomous man has no tissue, no muscle or bone, no mass at all. He is nonetheless the great defender of oppressive systems of behavior control; for man, in absolute charge of his own comportment, freely *chooses* to be punished when he could do otherwise by the simple exercise of volition. Since man determines *himself*, when we punish failures to conform, we are just giving people what they deserve; *they asked for it*. Free will is the instrument and the bodyguard of tyrants, great and small; political, interpersonal and yes, intrapersonal. It protects the purveyor of punishment from counter-aversive control by providing an irrefutable interpretation of bad behavior, an interpretation that resolves the tyrant of any role in the origin of misconduct, and licenses his use of brutal reprisal when misconduct occurs.

Please, think for a moment about how your own effective contact with the concept of the operant class liberated you from the grips of this ancient and destructive superstition; think of the impact that the discrimination of the temporally extended relation between environment and behavior has had on the course of *your* life. Here I do not mean just your studies and professional work, but how you understand your own behavior and that of your friends, your parents and your children, your colleagues, and even complete strangers, and accordingly, how you order your affairs. When we, the enlightened, detect a problem in behavior, we do not shrug our shoulders and attribute the problem to a lack of will or interest, to a defect in personality or intelligence or character, to a misguided mind or a renegade brain, or to any one of the myriad proxies of autonomous man. *Our* problem is not so easily solved, but it is far more *effectively* solved. For we recognize that the problem behavior is part of a *pattern* of comportment, shaped and maintained in the organism's dynamic interaction with other physical events.

We the behaviorally enlightened are aware that no matter how undesirable and, in the long run, destructive the pattern of action is for the person in question, it has emerged *inevitably* because in a particular environment, the act in question either *produces* or *terminates* events with reinforcing power. Moreover, we are in the privileged position to know how that very reinforcing power is established and diminished. When one knows how operant discriminations are generated in general, one *understands* the absence of interest, liking, preference, or partiality for particular events; one understands how things that are inherently *beneficial* can be feared and despised; and one also knows how, in principle, to render these events important, desirable – positively reinforcing.

Having acquired this most powerful discriminative repertoire, the scientifically enlightened have no need to resort to violence or to the threat of harm toward themselves or others in order to achieve changes in behavior. Indeed, due to the hard work of many experimental and applied analysts, *we the enlightened* know that aversive intervention is self-defeating in the long term; among its side-effects are counter-aggression, social withdrawal, and the key component processes of the patterns of behavior described as psychopathological (see, e.g., Dinsmoor, 1998; Sidman, 2001). Contact with our science has *reduced* the reinforcing potency of the immediate effects of coercive acts. Sure we get mad and we strike out in anger; we are human beings with

human histories, but a (unfortunately) rare form of experience has endowed us with an interpretative repertoire that leads us, far more often, to forgo the instantaneous relief from annoyance so often produced by aggression, in favor of efforts to build incompatible and beneficial action tendencies with positive reinforcement. Far more often, we reduce the frequency of emission of undesirable behavior not by making its automatic consequences *aversive*, but by making the consequences immediately produced by socially *beneficial* forms of behavior pleasurable, cool, desirable – *positively* reinforcing.

It is highly probable, dear reader, that the characteristics that you like most about yourself, and that are most appreciated by others, emerged or were enhanced in the course of your own personal Behavioral Enlightenment; in the acquisition of a scientific interpretation of the determination of behavior in the temporally extended interaction between the organism and its circumstances that rendered otherwise mysterious phenomena variants of familiar and general processes. If this is true, then you will agree that the provision of such a repertoire to others should rank among the most valuable of all human activities. Let us think then of who exactly is missing out on this Behavioral Enlightenment, and how we might best establish the reinforcing potency of the events that have so enriched our lives, in our fellow humans heretofore bereft of the joy and beauty of a scientific understanding of their own vital affairs.

Deprivation: who is missing out on the behavioral enlightenment?

Having devoted substantial time and effort to the dissemination of behavioral philosophy and its experimental and applied sciences, it pains me to admit that the answer to the question: “Who is missing out on the behavioral enlightenment?” is “*Almost everybody*.” Four decades have passed since B. F. Skinner’s valiant effort to break autonomous man’s stranglehold on the design of public policy and education with the publication of *Beyond freedom and dignity*, yet a natural science perspective on the provenance of human thought and action seems to be now no more commonly expressed or applied for the pass of time. Indeed, the popular view, on university campuses as well as on the World Wide Web, is that such an analysis was once attempted and found to be inadequate.

There was a time when psychology departments of any size and status felt the need to have a token experimental analyst on staff; now behaviorists who have no applied training often find their employment options limited. Some brave colleagues have organized attempts to escape the hostile academic environs of psychological essentialism, but departments of *praxis* or *behaviorology* or *behavior analysis* are still rare, and many worry that a secession from psychology would make a bad situation worse (see Holth, 2014, and the recent special issue of this journal on the future of behavior analysis as an academic discipline). The truly remarkable and increasingly professionalized applications of behavior principles in intervention with persons characterized as developmentally delayed would appear to have had but little effect on how people with a *typical* course of development think about the provenance of their own behavior. Surely the reader has heard it said that behaviorism has, in time, found its fitting clientele: relatively small organisms; furry, feathered, or autistic.

We do not seem to be fairing any better off campus. Indeed, a century after the founding of behaviorism, an articulate and well-educated person is far more likely to be

able to give a reasonably accurate, scientifically principled account of global warming, or of the origin of the universe, than he is of why he cannot get along with his mother-in-law, or of why his teenage daughter avoids him like the ebola virus, or of why he cannot seem to complete his quarterly reports on time. Here he will explain that he is a procrastinator, and always has been; that his daughter is just going through a stage, as all teenagers do; and that his mother-in-law is simply a miserable bitch, who *can* be nice but *chooses* not to be. He will say these things with the great assurance that so often masks deeply frightening doubt; for his explanations of these important behavior processes (not all of which issued from modern psychology) offer no guidance *at all* for improving his lot. This person needs our help, dear colleague, and he is not getting it.

And then there is a large subgroup of the general population with an even *greater* need of the benefits of a basic understanding of the determination of behavior. A vast number of people worldwide are sorely troubled by what clinical psychologists call “dysfunctional cognition.” They might tend to interpret or perceive everyday events as far more threatening, unacceptable, or embarrassing than most people would; they might be far more critical of themselves or of other people than is the norm; they might repeatedly imagine events or circumstances that seem only to frighten or disturb them. Following the lead of contemporary clinical psychology, they tend to interpret these same patterns of behavior as *symptoms* of an inherent defect or pathology of character, mind, or nervous system. As if is not enough that their own behavior frightens and disturbs them, and limits their contact with the kinds of events that compose the good life, they are informed by mental health professionals that they themselves are, in essence, the autonomous source of their private misery.

As a clinical behavior analyst, it is distressing to admit, as I must admit, that *our* efforts to provide natural science interpretations of such phenomena have been limited – exceedingly limited, if one considers the frequency of occurrence and the social significance of so-called dysfunctional cognition. I have asked you to consider the practical significance of your understanding of your own tendencies of thought and action and those of your loved ones as emerging in the dynamic, continuous, and wholly physical interactions that we describe as contingencies of reinforcement and punishment. Imagine now how important such an understanding might be to a person suffering with “dysfunctional cognition” – a person who presently views his or her own thinking and perception as *alien*, as inherently *defective*, or as issuing from the ineffable. Imagine now how it might feel, and what it might mean, to recognize in sufficient detail that such behaviors are the inevitable outcome of natural processes that, under other conditions, “*achieve safer and more useful interchanges with particular environments.*” Imagine how the acquisition of just such a discriminative repertoire might of *itself* produce beneficial change in the eliciting, discriminative, and reinforcing functions of the events observed. Imagine the guidance it might offer to the person in the production of circumstances likely to offset the pernicious side-effects of an especially intense and extended history of social punishment.

In the tradition established by B. F. Skinner and advanced in laboratories around the globe, we have in our hands the most comprehensive and practical natural science interpretation of covert behavior, of thinking and perceptual processes, yet to emerge in the history of humanity; but it is *unknown* to the persons who, arguably, have the *most*

to gain from this form of enlightenment. Our natural science interpretation of thinking and perception as discriminative operant behavior can be understood in sufficient detail to be useful by anyone who is capable of understanding, say, the evolution of species by natural selection, or the relation between supply and demand; yet it is almost *never* provided to psychotherapy clients (see, e.g., Mellon, 1998, 2013).

By what right deprivation?

Many of us who are now professional behavior analysts first acquired a behavioral repertoire of interpretation as young adults, while either explicitly confused or defensively certain of our identities and life course. We were not, for the most part, *ideally* prepared to acquire this repertoire, yet our interactions with the science of behavior helped us to sort out the sources of our difficulties, and to experiment accordingly in ways that led to increased well-being; as that science is helping us yet today. Were we then, and indeed are we now, fundamentally different from people undergoing treatment for “dysfunctional cognition”? If so, in what way, and how then might we best prepare our troubled fellow human beings to receive the benefits of enlightenment that we enjoy?

Of course, many clinical psychologists do believe that psychotherapy clients are inherently *incapable* of understanding their own psychopathology; but then, most clinicians themselves have but little conception of the role of contingencies of reinforcement and punishment in the genesis and maintenance of such phenomena. As such, it might well be their ignorance rather than their knowledge that they are unwilling to reveal to their clients. As behaviorists, we must ask ourselves: under what conditions (and thus by what right) would we say that a fellow human being, who may be engaged with demonstrable success in such complex activities as, say, running a household, holding a job, or studying for examinations, is *incapable* of learning how a history of punishment and negative reinforcement has affected the way that he or she tends to think? Even if a client *is currently* unable to benefit from the provision of a natural science understanding of the determination of his or her problematic patterns of thinking and perceiving, it would seem that the task at hand would be *the development of the prerequisite repertoire*. If our fellow human cannot yet understand a useful, natural science account of how his interactions with others have affected him, then we should *prepare* him to understand it.

Note however that the view that psychotherapy clients are incapable of beneficially interpreting the determination of their own thinking and perception is also prominent among the relatively few *behavior analysts* that intervene in non-autistic psychopathology. In the popular treatment approach known as acceptance and commitment therapy, the basic intervention is to ask and encourage the client to *suspend* all efforts to evaluate or interpret his or her own patterns of thought (e.g., Hayes, Strosahl, & Wilson, 2011). In contrast with all other natural phenomena, the client is told that he *cannot usefully understand* his own thinking and perceptual processes by systematic, rational analysis; behavioral or otherwise. With regard to his own troubling thoughts, he is told that the course of action known to us as the scientific method will lead *him* to no enlightenment. Indeed, the client is in effect told that his attempts at a rational analysis of these natural phenomena are in fact the very root of his problem, as “...verbal problem

solving and reasoning is based on some of the same cognitive processes that can lead to psychopathology, and thus it is not practically viable to eliminate these processes” (Hayes, Luoma, Bond, Masuda, & Lillis, 2006, p. 5).

It may be true that psychotherapy clients are, in general, incapable of understanding relational frame theory and applying it beneficially in the explication of their own problems. But it would surely be a remarkable reversal of the principles of the Enlightenment if the practice of weighing his impressions against the available evidence gave the psychotherapy client *no traction at all* in predicting and controlling a natural and accessible phenomenon like thinking, even his own thinking. This can be the only possible justification for the fact that there is no explicit dissemination of behavioral philosophy and of behavior-analytic explanatory principles in acceptance and commitment therapy, which is held to be derived from this same philosophy and these same principles.

“El sueño de la razón produce monstrous.”

In the spirit of the Enlightenment, skepticism, inquiry, debate, and doubt about the functional significance of our own perception and patterns of thought is in *no* case, and for *no* person, to be discouraged or suspended; it is rather to be *refined* and *developed* in accordance with the extant discriminative repertoire of each individual. The sleep of reason *does* bring forth monsters; and only a reawakening of reason dissipates them. As is true of any behavior problem, pernicious patterns of thought and perception are not to be *accepted* by anybody. They are to be identified, their dimensions and functional relations with other events are to be ascertained, and the resulting provisional analysis is to be employed in designing contingences that might alter the course of events in the direction of a richer and more satisfying existence. The good life depends on people being able to do this for their selves.

In this light, access to such a discriminative repertoire might well be recognized, by behaviorists at least, as a human right. People should not be denied that right just because the world has treated them more harshly than most, to predictable and undesirable effect in their interchanges with the environment. The problem with “dysfunctional cognition” is not thinking about thinking *per se*, but thinking about thinking in an ineffective *way* – non-scientifically.

Some would point out here, quite correctly, that cognitive therapy is explicitly designed to teach people to analyze their problematic covert processes in accord with the methods of science. But the problem with cognitive therapy is not that it encourages reason and the evaluation of evidence to change the way that people think; the problem is that it attempts to do so without a basic understanding of *why* people think in a problematic fashion *in the first place*. It lacks an understanding of key component processes such as negative reinforcement; adventitious reinforcement; the operant chain and conditional reinforcement; the conditional discrimination and equivalence relations. With analytical tools like these, “dysfunctional cognition” is revealed to be just more operant behavior; and in contrast with cognitive therapists, we have a damn good handle on where operant behavior comes from, and how best to change its course.

Conceptual, basic, and applied scientists alike: let us redouble our efforts to employ what we know about behavior in general to better understand so-called dysfunctional

cognition, and find ways to effectively share that knowledge with those who are deeply troubled and harshly deprived by their own behavioral processes. And if that humanitarian benefit is not enough to encourage effort toward this end, then here is another good reason: the systematic interpretation of problematic cognition would greatly enhance *the dissemination of behavioral philosophy and its experimental and applied sciences more generally*. I say so because in the clinical, educational, or organizational application of behavior analysis, once we have identified the physical dimensions and the natural reinforcers of the behavior we want to generate, the next thing that we do is identify events with *extant* reinforcing potency that can be arranged as *consequences* for approximations of the desired acts. What we want to generate is a repertoire of naturalistic interpretation of behavior in general, and perhaps there is no more powerful natural consequence for this sort of analytic activity than the understanding of “craziness.”

Utilizing extant reinforcers in generating naturalistic interpretative repertoires

What is the most popular psychology course at every college and university throughout the world? Unfortunately, it is not *introduction to behavior analysis*; it is, of course, *introduction to abnormal psychology* or *introduction to psychopathology* or the equivalent. *Everybody* wants to know why people behave in strange and exotic ways that seem corrosive to their own self-interest; that keep them out of work, out of touch – that destroy any hope of winning respect, admiration, tenderness, and love. And they want to know this not just so they can understand some problematic relative or friend; they are, perhaps, interested as well because *they themselves* occasionally act against their own interests, and they are perhaps more than a bit nervous about the implications of this observation.

Of all behavioral phenomena (with the possible exception of sex) nothing excites interest and reinforces inquiry like good old garden-variety psychopathology: anxiety, depression, psychosis, personality disorders, substance abuse, and the like. In neglecting the scientific interpretation of so-called psychopathology, we behaviorists are squandering this potent reinforcer for individuals’ budding efforts to observe and understand behavior–environment relations. And that is regrettable, for through their understanding of problematic behavior, people would gain insight to the causes of the things that they *like* about themselves, and with that, an understanding of how they might *replicate* these effects in the lives of others; how they might more effectively spread fair and honest, creative and generous, useful and admirable action tendencies. An understanding of psychopathology is a solid and tractable stepping stone to a comprehension of the determination of good living.

This is true not only because psychopathology is almost universally intriguing but also because of its status, in large measure, as an undesirable by-product of the aversive control of social behavior. Garden-variety psychopathology is the predictable and indeed inevitable outcome of the widespread and unnecessary social control of behavior by the arrangement of contingencies of punishment and therefore negative reinforcement; by threat, by intimidation, by ridicule, by violence, by expressions of displeasure with unmet expectations, by response-dependent withdrawal of attention, affection, or

esteem – by making people *miserable* when they do not do what we want, and by *relieving* their misery when they please us.

An examination of common factors in the therapeutic interventions of clinicians of many stripes will wither doubt about this contention. Any effective psychotherapeutic approach can be readily interpreted as providing conditions that ameliorate the effects of long-term aversive social interactions, interactions that slowly but surely corrode the joy, contentment and personal growth that are otherwise inherent to interpersonal experience. Psychoanalytic psychotherapy, client-centered therapy, systemic therapy, cognitive therapy – they all arrange for exposure to an unusually non-punitive environment, and encourage *some* understanding of the personal effects of long-term interactions with aversive social conditions (see, e.g., Greenspoon & Brownstein, 1967; Mellon, 1998). A behavior-analytic understanding of the role of *positive* reinforcement in generating the discriminative behavior changes (including *interpretations* of behavior) that lead to significant changes in extra-therapeutic social interactions might help people to observe the relatively slow and subtle effects of differential positive reinforcement in shaping operant behavior more generally.

The dissemination of behavior analysis is hamstrung by the fact that most people are not yet interested in acquiring a discriminative repertoire that would radically improve their existence. To propagate the behavior-analytic repertoire more effectively, we must make better use of powerful extant reinforcers, of things that they are already interested in – in phenomena that otherwise remain inexplicable, bizarre, and threatening. The natural science interpretation of psychopathology leads us *directly* to aversive control, a powerful reinforcer in its own right; by definition, people dislike it – a lot. But most peoples' level of discrimination of the extent of aversive control in their lives, of the behavioral processes involved, and of the undesirable side-effects of these practices, is insufficient to motivate useful experimentation with alternative practices.

We must find ways to show people to what extent their personal characteristics are shaped by punishment and the threat of punishment; and in particular, how the termination of threats of social censure for dissent shapes and maintains unverifiable and otherwise useless occult interpretations of natural events. They must further be shown that this familiar form of social intervention is *not necessary* to generate *any* form of civilized behavior, and that far more often than is generally recognized, aversive control serves the controlling agent's interests at the expense of their own.

Aversive control, superstition, and the successful dissemination of “new atheism”

An illustration of the possible effect of such a strategy might be found in the impressive success of the so-called new atheism movement on the analytical repertoires of many thousands and perhaps millions of people. Of course the term “new atheism” is a misnomer, for there can be nothing new about disbelief in the non-existent. This is the Achilles' heel of the movement and I will return to it in a moment; but first of all, what does “new” atheism have to do with the dissemination of behavior analysis?

Like behaviorism, new atheism opposes the widespread worldview that physical events are best thought of as having immaterial causes. Instructively, new atheism has been successful in *changing* superstition by showing people how their repertoires of

belief in heaven and hell are generated by aversive control contingencies arranged by religious authorities and members of their flocks right here on earth. Indeed, the new atheism movement began in the wake of the September 11, 2001, suicide attacks by young adults, in that still unsettling illustration that we humans might be rendered willing to do *anything* to escape aversive conditions that are man-made and implicitly or explicitly designed to have such effects on our behavior. In books written for the general public (e.g., Dawkins, 2009; Dennett, 2006; Harris, 2005; Hitchens, 2008), the leaders of this application of Enlightenment principles have convincingly shown how (to translate their position into behavior-analytic terms) religious indoctrination ensures that the stimuli inevitably produced in the incipient (and even private) emission of punished response forms (sins) acquire negative reinforcing potency. Relief from the negative reinforcers produced by “sinful” acts is then arranged for the emission of acts judged to be “moral,” including expressions of faith in unverifiable assertions – expressions that include both proselytizing to, and acts of aggression against, themselves and other sinners.

Importantly, the leaders of new atheism reveal the role of aversive control in generating, maintaining, and spreading superstition *in the public forum*, principally in heated interactions with the very men and women of the cloth who menace the faithful and the faithless alike as a professional calling. The atheists’ debates with clerics are readily available on the Web and might serve as a model for efforts to disseminate behavioral philosophy and science; excepting the academic journal *Behavior and Social Issues*, there is precious little discussion of the public policy implications of our approach on the internet.

These modern critics of theism are instructively effective in revealing both the causes and the tragic fallout of attributing independent causal power to an imaginary agent in the sky, but alas, each in his own way attributes autonomous dominion to an equally imaginary agent residing within the bodies, minds, or souls of each of us. As civilized human beings, the new atheists take justifiable offence at the clerics’ suggestion that without the threat of eternal, excruciating punishment that they render tangible, we would all soon be murdering our neighbors, absconding with their property, and fornicating in the streets. But the atheists have little to offer in terms of an alternative program of generating moral behavior. They cite our innate love of justice, or will to good, or our inherited cooperative tendencies, or the wisdom of the mind or brain. To account for the emergence of moral behavior without the threat of damnation, even good and accomplished men who wish to deliver us from the grip of superstitious tyranny fall back, unconvincingly, on the inherent decency and kindness of autonomous man (or his autonomous nervous system).

And here, of course, is where we come in. *We* have useful and intellectually satisfying answers to the tough questions, such as why, if not as a function of free will or a directorial physiology, might we behave in a fashion characterized as ethical on some occasions but not on others? Do our honest genes or right-thinking neural structures take a few minutes off when we have to explain to the boss why we are late for work again, or do the bad genes or naughty neurons simply take temporary control of the body? If so, how is it that they have such impeccable timing, steering us clear of danger and then yielding control?

Properly presented, the concepts of the discriminated operant and of automatic, conditional positive reinforcement provide a powerful solution to the question of how we might, *in the course of ontogeny*, generate *tendencies* to emit productive, just and honorable behavior without the threat of hellfire or of its earthly cousins, such as the threat of low-wage, dead-end jobs; homelessness; imprisonment; ostracism; isolation; starvation, ill health, and disability. We know, and we have known for some time now, how to *establish* the positive reinforcing potency of the stimuli mechanically produced in the emission of actions that enrich rather than impoverish the lives of others; by making them the differential context of production of *extant* positive reinforcers (e.g., Shahan, 2013; Williams, 1994). But to generate a similar repertoire of understanding in the general public, we must ourselves make full use of existing positive reinforcers, such as those inherent in the explication of psychopathology and its relation to aversive control.

Such efforts are utterly tripped up by the fact that a substantial number of behavior analysts in fact *advocate* the use of aversive control procedures, particularly in therapeutic or educational interventions in disruptive and self-injurious behaviors in individuals with atypical development. Standard textbooks in applied behavior analysis provide developing clinical scientists with detailed guidance in the design of effective punishment-based interventions (e.g., Cooper, Heron, & Heward, 2007). In recognition of the pernicious side-effects of aversive control procedures, current ethical standards require that aversive control be used only when positive reinforcement-based procedures have proved to be ineffective; in such cases, however, social punishment is *mandated*, as “Staying on the side of positive reinforcement must be balanced with the client’s right to effective treatment” (Bailey & Burch, 2011, p. 32). But what sort of data would lead us to decide that it is impossible to reduce the frequency of emission of an undesirable response form by the positive reinforcement of incompatible forms? Under what conditions do we conclude that the principles of reinforcement are insufficient to guide non-aversive therapeutic and educational intervention?

The hard line defeatism inherent in claims that we must sometimes resort to the design and employment of temporally extended aversive control procedures for the good of the individual and of those around him is functionally equivalent to the justification for the social punishment of autonomous man, encouraging its apologists. Punishing agents find safety from counter-aversive control only when it is satisfactorily demonstrated that they have no choice but to punish; in which case, their *failure* to punish is subject to punishment! Behavior-analytic advocates of social punishment are not, of course, mystics, and they support the use of such procedures under limited conditions, but in doing so they validate the nearly universal view that aversive control is indispensable to the development and maintenance of cultured behavior. It is unlikely that we will ever make a serious challenge to the widespread belief in an autonomous inner agent until we can show that he need not be restrained.

Extending the behavioral enlightenment

Habitual readers of this journal, one and all, will count themselves fortunate to have encountered radical behaviorism and its experimental and applied sciences, and each will have had, in consequence of this encounter, a beneficial effect on the lives of

members of their community. Yet we must admit that the current impact of our philosophy and science on humanity is but a fraction of its potential; natural science interpretations of behavior appear to be no more prominent today than they were 30 or 40 years ago. In treating the dissemination of behavior analysis as a problem for applied science, we might think of how to organize circumstances such that the events produced by a naturalistic interpretation of behavior might acquire positive reinforcing potency, and arrange for these events to occur as a consequence of the incipient analytic efforts of members of the general public.

An underutilized natural reinforcer for the scientific analysis of behavior is the rendering of otherwise inexplicable psychological phenomena variants of familiar and general processes. Prime candidates for such analysis are the phenomena described as “psychopathological”; phenomena that, with the exception of developmental disabilities, have to date received scant attention from our scientific community. Such phenomena are inexorably related to punishment and its threat, a form of behavior–environment relation that, while complex, might be more readily acknowledged and accepted as a source of behavioral characteristics when compared with the more subtle effects of positive reinforcement contingencies. The understanding of effective psychotherapy and its role in changing interactions between the person and his or her social environment would then provide an illustration of the role of positive reinforcement in shaping forms of behavior that enrich individual and community life. The resultant understanding of the power of positive reinforcement in generating and maintaining socially valued and personally satisfying behavior would then undermine the attribution of behavior to non-existent inner agents. Free will is evoked to protect the punisher of the misdeeds of others; if instead we positively reinforce the beneficial acts of others, we will achieve a similar reduction of offense with no need to foist blame on spectral scapegoats.

Toward this end, applied behavior analysts are hereby called upon to extend the benefits of their numerous investigations of the publically observable behavior of persons characterized as developmentally delayed to the interpretation of problematic private behavior in these same persons as well as in others. For example, “dysfunctional” cognition tends to be stereotypic in both form and content, much as the hand-flapping or rocking of autistic children; and the stimuli thereby produced often elicit pain and discomfort in the actor himself, as is observed publically in autistic self-injurious behavior. Analyses of similarities and differences in these and other related phenomena in lower- and higher-functioning individuals might well yield a better understanding of their determination in both populations. Such analyses would also equip the autism therapist to intervene more effectively in problematic patterns of thinking when they emerge in their client’s parents, guardians, or therapists.

Just as one need not be a cognitive psychologist to provide natural science accounts of remembering, attending, or problem-solving (e.g., Palmer, 2003; Schlinger, 1995), one need not be a clinical psychologist to generate behavioral interpretations of phenomena such as obsessing, paranoid or catastrophic thinking, or self-debasement. Although widely treated as if they constitute a distinct field of inquiry, such phenomena do not appear to have any special ontological status; there are, as yet, no unique principles of psychopathology. There are, however, experimentally derived, general principles of behavior that are currently

underutilized in the interpretation of “dysfunctional” cognition and related acts. Thus, in addition to our undergeneralized applied scientists, experimental and conceptual behavior analysts are too called upon to dedicate a portion of their interpretive energies to the largely private suffering of an untold number of men, women, and children. In employing their skills to render strange phenomena familiar (the indelible mark of a science), the nature of less exotic and more socially desirable action tendencies otherwise attributed to specious agents will be more readily discriminated by more people, facilitating their cultivation and spreading the wealth of enlightenment. Behavior being more generally seen for what it is, our species would approach a most worthy objective – a life examined, to good effect, for each of us.

Disclosure statement

No potential conflict of interest was reported by the author.

References

- Bailey, J., & Burch, M. (2011). *Ethics for behavior analysts* (2nd ed.). New York, NY: Routledge.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Pearson Education.
- Dawkins, R. (2009). *The god delusion*. New York, NY: Random House.
- Dennett, D. C. (2006). *Breaking the spell: Religion as a natural phenomenon*. New York, NY: Penguin.
- Dinsmoor, J. A. (1998). Punishment. In W. T. O’Donohue (Ed.), *Learning and behavior therapy* (pp. 188–204). Boston, MA: Allyn and Bacon.
- Ferster, C. B. (1967). Arbitrary and natural reinforcement. *The Psychological Record*, *17*, 341–347.
- Greenspoon, J., & Brownstein, A. J. (1967). Psychotherapy from the standpoint of a behaviorist. *Psychological Record*, *17*, 401–416.
- Harris, S. (2005). *The end of faith: Religion, terror, and the future of reason*. New York, NY: W. W. Norton & Company.
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, *44*, 1–25. doi:10.1016/j.brat.2005.06.006
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2011). *Acceptance and commitment therapy: The process and practice of mindful change* (2nd ed.). New York, NY: Guilford Press.
- Hitchens, C. (2008). *God is not great: How religion poisons everything*. New York, NY: Random House.
- Holth, P. (2014). Introduction: The future of behavior analysis—Part of psychology, or a separate discipline? *European Journal of Behavior Analysis*, *15*, 7–10.
- Mellon, R. (1998). Oversight: Radical behaviorism and psychotherapy. *Journal of Psychotherapy Integration*, *8*, 123–146. doi:10.1023/A:1023284228809
- Mellon, R. C. (2013). Interpreting thought-action fusion in obsessive thinking: Covert links of operant chains in clinical behavior analysis. *European Journal of Behavior Analysis*, *14*, 177–197.
- Pagden, A. (2013). *The enlightenment: And why it still matters*. Oxford: Oxford University Press.
- Palmer, D. C. (2003). Cognition. In K. A. Lattal & P. N. Chase (Eds.), *Behavior theory and philosophy*. New York, NY: Plenum Press.
- Russell, B. (1946). *A history of western philosophy, and its connection with political and social circumstances from the earliest times to the present day*. London: George Allen and Unwin.
- Schlinger, H. D. (1995). *A behavior-analytic view of child development*. New York, NY: Plenum.

- Shahan, T. A. (2013). Attention and conditioned reinforcement. In G. J. Madden (Ed.), *APA handbook of behavior analysis, Vol. 1: Methods and principles* (pp. 387–410). Washington, DC: American Psychological Association.
- Sidman, M. (2001). *Coercion and its fallout*. Boston, MA: Authors Cooperative.
- Skinner, B. F. (1957/2014). *Verbal behavior*. Cambridge, MA: B. F. Skinner Foundation.
- Skinner, B. F. (1971). *Beyond freedom and dignity*. New York, NY: Alfred A. Knopf.
- Williams, B. A. (1994). Conditioned reinforcement: Neglected or outmoded explanatory construct? *Psychonomic Bulletin & Review*, 1, 457–475. doi:[10.3758/BF03210950](https://doi.org/10.3758/BF03210950)