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B.F. Skinner's Theory of Performance Excellence:

A Radical Behavioral Perspective

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B.F. Skinner's Theory of Performance Excellence: A Radical Behavioral Perspective

Burrhus Frederic (B.F.) Skinner was a revolutionary in the field of psychology, particularly noted for his development of a philosophy of science and an approach to psychological study labeled radical behaviorism (Rachlin, 1995). To Skinner, psychology was synonymous with an organism's interactions between its environment and its own behavior – and behavior was defined accordingly. This way of studying psychology differed greatly from preceding behavioral iterations in psychology and kept up with advances in established fields of science. Due to the deficiencies of the behavioral tradition coming before Skinner, misunderstandings by many psychologists and scientists of the Skinnerian approach were gross and frequent. This was especially true when it came to Skinner's take on the free will of humans, how behavior can and should be guided, and the overall goals of science. Yet through conceptualizing psychology as a functional process and by focusing on the study of behavior as its subject matter, Skinner developed an influential and useful body of work that awarded him the National Medal of Science award and the first honoring for the Outstanding Lifetime Contribution by the American Psychological Association (Morris, 2008). Specifically, Skinner coined the term "operant" behavior, which, in being different from reflexes triggered directly by identifiable stimuli (respondents), has been misconstrued as "voluntary action" (Baars, 2003), but actually refers to behaviors that operate on the environment and are affected by consequences. It is a term and a "type" of behavior that is inextricably linked to his definition of psychology and was well-suited to Skinner's talents as a scientist. Cleverness and ingenuity were common in Skinner's design of experiments and his creation of various apparatuses for experimenting with operants. With this style and with a focus on operant behavior, Skinner's eyes were turned toward how an organism's behavior was shaped over the course of its lifespan

by its environment and the consequences of its behavior. Perhaps the key take-away when reflecting on Skinner's way of thinking is that he saw human life as a worthy subject of scientific study (Rachlin, 1995) and he saw human behavior as selected by consequences, analogous to the selection of genes by environments (Skinner, 1981). The maxim may go: ''Regard no practice as immutable. Change and be ready to change again. Accept no eternal verity. Experiment'' (Skinner, 1979, p. 346).

In this doctoral paper, I am presenting B. F. Skinner's theory of performance excellence for use in the field of performance psychology consulting as if for a chapter in Aoyagi and Poczwardowski's (2012) *Expert Approaches to Sport Psychology: Applied Theories of Performance Excellence*.

Biographical Sketch

To some extent, Skinner appears to have been motivated throughout his life by the notion of the "inner man." On a personal level, this affected his interest and endeavors with writing, as he worked to develop as a novelist of the stream-of-consciousness variety. He, by his own admission, was met with failure in his pursuit of the literary exploration of his own "inner man." Fortuitously, he persisted with reading and writing enough to stumble upon philosophical ideas that put science on a higher echelon than literature, and perked his ears up to psychology (Fallon, 1992). His affinity for psychology at this point was paired with behaviorist philosophy and theory. In exploring this line and pursuing graduate study at Harvard University, he was further fueled by distaste for the European psychology that had developed with its focus on an agentic and separate-from-the-physical-world "mind" (Rachlin, 1995). Skinner was convinced that the control of human behavior (and the behavior of all organisms) could always be traced back to some kind of stimulation from the environment (if only the environments of generations past).

So he set his life work on developing a philosophy of science and study of psychology that showed how human behavior could be reasonably predicted and certainly controlled – the true goals of his pragmatic and humanistic inclinations.

Throughout Skinner's life, his attention was often drawn to the issues afflicting human behavior when environmental control is left unchecked or left to forces ill-equipped to bring about the behaviors of happiness, productivity, and cooperation. Though many consumers and colleagues have misunderstood the goals of a science of behavior that emphasizes prediction, control, and the deliberate design of societal practices, Skinner's intentions have always been for humans to have more peaceful individual lives and interactions with others. This peacefulness, he seemed to believe, arises from a set of conditions around a person or group of people – a set of conditions in which work, leisure, and basic biological necessities are balanced. Regarding leisure, Skinner's draw was to the arts. He experienced the positive psychological effects of leisure and skill development. However, the world in which many of us live is not set up to allow the frequent, adequate, and healthy engagement with these important areas of life. Skinner was no stranger to opponents of the details needed to create such a world, and remained steadfast in claiming that a person's environment can be changed in significant and realistic ways that work in the direction of a kind of thriving that may be labelled "performance excellence."

Unique Features

Radical behaviorism differs from other scientific philosophies in that it treats psychology as a natural science and rejects mentalistic formulations of an inner agent (i.e., the notion of mind). As a result, "its subject matter is particularly carefully defined, and its methods of data collection, analysis, and interpretation generally agreed upon by researchers within the field" (Chiesa, 1992, p.1288) resulting in a level of coherence that makes it "the closest thing to a

school or paradigm among all modern positions" (Hillix & Marx, 1974, p. 264). Additionally, radical behaviorism is known for being an inductive, data-driven approach based on behavior-sampling rather than on the hypothetical deductive method of hypothesis. It offers a naturalistic view of scientific events emphasizing functionalism. Specifically, it adopts a causal mode that replaces cause with *a change in the independent variable* and effect with *a change in the dependent variable*, providing a functional relational rather than a mechanistic account and eliminates the need for mediating links between one event and another. Radical behaviorism also takes a stance of causation not being sequential or assuming contiguity in space and time as it relies on selection over time of characteristics of behavior from a wide range of possibilities available to the individual (Chiesa, 1992). The term "radical" refers to the application of the approach not only to the behavior of the organism studied but also to the behavior of the psychologist doing the studying. A few more points are worth elaborating to become more familiar with a radical behavioral approach: 1) the definition of behavior, 2) philosophical and theoretical parallels between psychology and biology and physics, specifically in regard to the nature of behavior and how it is shaped, 3) the illusion of free will, 4) the goals of science, 5) constant experimentation. Each of these aspects is interwoven with the others and is critical to an overarching view of an organism (hereafter, "organism" will be replaced with the word "human," "person," or "individual"). While radical behaviorism speaks of behavior-environment relations involving stimuli and responses as verbal couplets, Skinner's program was wholly nondualistic, recognizing that stimulus functions and response functions were a unified, total-working whole process. Before elaborating, a glossary is needed:

Stimulus: any event or set of events that affects/guides behavior

Environment: anything outside the behavior being analyzed; environment can be external or internal to the individual; environment is where independent variables are to be found

Context: the entire system of factors or conditions encompassed by past and current environments merging together and operating in any current event

Contingency: the mutual containment of conditions or contributing relations on which an event is dependent (e.g., a flame is not contingent upon a spark, but rather a flame is the contact of objects in a particular atmospheric pressure)

Consequence: the introduction of a stimulus when a response is emitted

Reinforcement: the effect of a consequence on the likelihood or strength of behavior

Conditioning: the changes in frequency, speed, or magnitude of behavior as a result of reinforcement

Respondent conditioning: a change in the speed or magnitude of a respondent

Operant conditioning: a change in the probability (in actuality, the frequency) or magnitude of an operant

Response: synonymous with behavior

Respondent: a pattern of response based on the pairing of stimuli, selected by evolutionary environments

Operant: a pattern of response based on the relation of response followed by a stimulus; operant behavior can be thought of as "operating upon" the environment, selected by historical environments.

Definition of Behavior

First and most simply, behavior refers to any and all activity of the person. Technical definitions specify that behavior is "anything a person says or does...any muscular, glandular, or

electrical activity of an organism" (Martin & Pear, 2015, p. 2). This means that throwing a ball is behavior. Planning where to throw a ball is behavior. The electrical activity in nerves and muscles of throwing a ball is behavior. "Hoping" the ball goes to a specific target is behavior. Seeing the ball go somewhere is behavior. And "feeling happy" that the ball hit the target is behavior. With each of these examples, it is clear that behavior involves what is happening inside a person– that which cannot be observed directly – and what is happening overtly with a person – that which can be observed directly. Furthermore, all behaviors serve a function, which is also to say that all behaviors "work" in some way or "do" something for a person. Throwing a ball provides the visual stimuli of the ball traveling through space, the kinesthetic sensations in the musculature of the thrower, the auditory stimuli of the ball making contact with another object, the reaction of the catcher, or any combination of these events. Planning where to throw a ball is the same as responding to the behavior of others in the environment or the physical environment itself and leads to an effective physical or social outcome. The electrical activity in the nerves and muscles accommodates the weight of the ball in response to gravitational forces and moves the arm. "Hoping" the ball goes to a target, though doing little or nothing for the actual outcome, may serve to alleviate feelings of anxiety about failure, to engage in coincidental behavior present when things worked out in the past, or to emulate a figure in one's life – depending on the history of the individual. "Feeling happy" is experiencing the physiological sensations that occur when desirable events occur and/or when the individual is engaging in other "happy" behavior, such as smiling, which may lead to pleasant social reactions. Thus, emotions, whether hoping or feeling happy, predict overt behavior which is reinforcing to organisms and eventually, evolutionarily, lead to emotional reactions being a frequent aspect of behavioral repertoires.

Behavior Selection

The next unique notion regarding the nature of behavior and its shaping is that behavior is "selected by consequences," analogous to the selection of genes by environments. This idea is illustrated via the definitions of positive and negative reinforcers. Some stimuli, the presentation of which increases the preceding behavior (and the removal of which ultimately decreases the preceding behavior via extinction), are referred to as positive reinforcers. Some stimuli, the removal of which increases the preceding behavior (and the presentation of which decreases the preceding behavior in the presence of those stimuli, i.e., punishment), are referred to as negative reinforcers. Still other stimuli have no effect on behavior – neutral stimuli. These stimuli primarily affect individuals in their given state when the stimulus was present or absent. These states are called deprivation or satiation. Food may be a positive reinforcer for eating behavior when an individual is deprived (think "hungry") or a negative reinforcer for eating behavior when the individual is satiated (think "full"). For an explanation of how people came to be affected by stimuli in this way, the reader is referred to Skinner (1981) [the first kind of selection by consequences was the natural selection of biology, which gave rise to behavioral processes (respondent conditioning and operant conditioning) through which organisms could adapt to new and different environments]. Thus, a person begins life with behavior because evolutionary environments have selected various respondents along with the potential to emit operants. As the environment stimulates behavior, whatever behavior it stimulates also has an effect on the environment, a "consequence" – something happens after the behavior because the environment is always stimulating. This interchange between behavior and environment follows the same principles as natural selection: variation, selection, and retention or extinction. However, the particulars involve the following: variation refers to differences within the population of behavior of a *single* individual (Donahoe, 2012) derived from varying environments in the

evolutionary history of the individual, selection involves the selection of functional units of behavior by reinforcement (consequences that follow behavior) in the lifespan of the individual rather than across generations, and retention involves the repetition of reinforcement based on the relative stability of environments and the ways they react ("contingencies") to particular behaviors. The similarity between modern physics and a science of behavior lies in the functional interdependence of behavior and environment. The modernity is to be found in how far removed physics is from the mechanistic, billiard ball physics of Newton. Modern physics emphasizes an "organic, ecological view of the world [in which] the universe is no longer seen as a machine made up of a multitude of separate objects, but appears as a harmonious indivisible, whole, a network of dynamic relationships" (Capra, 1983, p. 32). There is a similar view on the interdependence of stimulus and response functions. Again, a stimulus or a response is a function – it is what it does under the current circumstances rather than what its form is. The idea is summarized by the following: "an investigation with the observed events of an interaction between a responding organism and its stimulating object, not as a stimulus that the response depends on, with the stimulus standing independent, but as an interdependence of the two. When we are stimulated we are responding, and when we are responding it is to something, a stimulus object" (Delprato, 2009, p. 673). With these theoretical implications of behavior at hand, "radical behaviorism," in its more contemporary philosophical form, goes by the name of "functional contextualism."

The Illusion of Free Will

As the view of interdependence between behavior and environment has now been discussed, it follows that a behaving individual is not behaving independently in the sense of behaving autonomously or "on its own free will." The organism behaves in conjunction with the

stimulating environment and is shaped by the subsequent interaction between its behavior and the environment. Even when the individual emits its "first" behavior, the behavior is made allowable by the environment. Light stimulates the behavior of eyes, air stimulates the behavior of lungs, gravity stimulates the behavior of bones and muscles, and so on. We soon come to the case of behavior commonly referred to as "voluntary." This kind of behavior is the kind which would be spoken of as being done "in order to" do something or make something happen. However, this kind of behavior still comes about through selection by consequences described earlier. More specifically, "the intention or purpose implied by the phrase 'in order to' is a matter of the extent to which consequences are effective in altering behavior, and hence the extent to which they must be taken into account to explain it" (Skinner, 1971, p. 170). A potentially more difficult case of behavior to explain involves the time when a person could be said to be "trying to do" something in a particular way or is choosing to do something, such as a skilled movement. But the explanation remains the same, as shown by Skinner (1971):

> The purpose of a skilled movement of the hand is to be found in the consequences which follow it. A pianist neither acquires nor executes the behavior of playing a scale smoothly because of a prior intention of doing so. Smoothly played scales are reinforcing for many reasons, and they select skilled movements. In neither the evolution of the human hand nor in the acquired use of the hand is any prior intention or purpose at issue. (p. 204)

The argument often comes that a person has "free will" because they may "choose not to" do something. Yet the behavior of "choosing not to do" would also be selected by reinforcing consequences, for example, the reinforcing consequences of resisting the control of a coercive person. Furthermore, people often speak of behavior as being voluntary or a result of free will or

the mind if it was preceded by verbal behavior[1] of the sort usually associated with increased likelihood of the behavior in question. "I'm going to slide" makes sliding seem voluntary, while sliding without the private verbal behavior makes the behavior seem "ingrained." But verbal behavior must not be taken to indicate free will or the will of the mind, but rather simply as other behavior for which to account. Denying free will in this way is not to make people feel badly about their lack of agency, but to keep the focus on the environment when trying to change how people behave. It is awfully convenient for people working with performance psychology consultants, who happen to be in the performer's environment and not in the performer's mind.

The Goals of Science

The goals of science, including a science of behavior, involve prediction and control. Many people object to the word "control" because it seems to attack the notion of free will; however, the nature of "free will" was just discussed and if it may become a less passionate concept, we may work more effectively with helping people change/improve behavior. Additionally, the control sought by a science of behavior would not be the kind of control to "force" a person to do something they may not want to do, but rather to see how a person can be influenced in ways in which they will behave healthily, peacefully, and/or excellently. Since the control of behavior rests in the arrangement of environment variables, the issue of prediction can be considered. It is highly predictable that a person will blink if the environment is arranged such that the person's eyes are open and an object comes close to the eye at a certain speed. Similarly, environmental variables can be taken into account which may allow us to predict whether or not

[1] See Hayes, Barnes-Holmes, & Roche (2001) for a detailed explanation of the term verbal behavior. For the purposes of this paper, verbal behavior can be thought of as using symbols that stand for, and function similarly to their corresponding, nonarbitrary physical stimuli.

a person will do something that is often considered "voluntary," such as eating or drinking. The necessary environmental variables which may be needed can be as simple as the passage of time with food or drink unavailable and then the introduction of food or drink. In a behavioral science of human performance, the environmental variables will be quite complex; yet the understanding and control of these variables would facilitate an increase in the frequency and quality of excellent performance.

Constant Experimentation

Even a commonsense perspective on the pursuit of the set of behaviors giving rise to the term "excellence" would include a substantial and continual sequence of improvements in skills across time. In this regard, a performing individual would be reinforced for improvement and for behaviors that lead or may lead to improvement, as would the individuals working with this performing individual. Everyone must have their eyes, quite literally, on constant improvement. What will work for constantly improving must be determined through prediction and direct tests of intervention. Constant experimentation would achieve such goals. Most importantly, constant experimentation is a worthwhile goal and ongoing practice not only for considering how performers are reinforced (or not) for their performance behaviors, but also for considering how the conditions around the performer that give rise to excellent performance are set up. It is a practice of always trying out ways of living and behaving that will influence the physical and psychological health and fitness that will facilitate excellent performance. Constant experimentation is useful because it promotes an atmosphere of constantly questioning which rules regarding performance are being used and how. It also promotes a playful attitude toward improvement. It speaks to a "let's try this" approach toward shaping behavior by successive approximations. Such constant experimentation requires a manageable network of people who

can be influential in an individual's life in ways that affect performance. As a preview, it is likely that this network would involve parents or guardians, coaches (and other athletic personnel), as well as fellow performers.

These unique features will show up, will be further discussed, or will be implied in the theoretical considerations of the contexts in which a performing individual experiences "performance breakdowns" (and how to eliminate altogether the occurrence of performance breakdowns) and the contexts in which a performing individual becomes excellent. But first, discussion of the context of the field of performance psychology and the need for a radical behavioral/functional contextual approach is warranted.

Introduction: The Possibility of a Behavioral Science of Performance Excellence

The field and practice of performance psychology has been fraught with issues of defining what the field is about and what a practitioner does. Most recently, this has led to a re-definition of the field and the practice by Portenga, Aoyagi, and Cohen (2017):

> Performance psychology is the study and application of psychological principles of human performance to help people consistently perform in the upper range of their capabilities and more thoroughly enjoy the performance process. Performance psychology practitioners are uniquely trained and specialized to engage in a broad range of activities, including the identification, development, and execution of the mental and emotional knowledge, skills, and abilities required for excellence in performance domains; the understanding, assessment, and managing of the psychological, cognitive, emotional, behavioral, and psychophysiological inhibitors of consistent, excellent performance; and the improvement of performance environments to facilitate more

> efficient development, consistent execution, and positive experiences in performers. (p. 54)

In addition to issues with defining what a performance psychology practitioner does, the field has also been met with criticism in its ability to develop appropriate frameworks for dealing with its subject matter. The following quotation sheds light on this criticism: "The limited scope of information coverage that models and theories [as opposed to theoretical paradigms] provide clearly does not allow for practitioners to make sense of large amounts of information from various contexts" (Foss, Minaker, Doerr, Aoyagi, 2017, p. 2).

The application of a radical behavioral paradigm simultaneously achieves the following goals: (a) tidying up the subject matter of sport and performance psychology, which is behavior – more specifically, particular environment-behavior relations unique to the refined performance that could be called "excellent performance"; and (b) offering a framework with enough scope to accommodate information from various contexts. As mentioned previously, this type of behavioral paradigm matches the developments that have occurred in contemporary paradigms of physics and evolutionary biology, fields which have garnered the accepted legitimacy that the field of performance psychology seeks. As such, this paradigm can appropriately be referred to as *a radical behavioral or functional contextual theoretical paradigm of performance excellence*. This title remains congruent with the important definition provided by Portenga, Aoyagi, & Cohen (2017). Yet it may be taken even further to advance the field and the application. The application of performance psychology is derived from performance psychology as a field of study, or, in other words, a scientific discipline. Being a scientific discipline, it follows that the discipline of performance psychology is based in methods and technologies that "attempt

to discover order, to show that certain events stand in lawful relation to other events" (Skinner, 1953, p. 6). This brings up two crucial points: 1) The events in question match with the knowledge, skills, and abilities described above (psychological, cognitive, emotional, etc.), and 2) human behavior is lawful, meaning "that what a [performer] does is the result of specifiable conditions and that once these conditions have been discovered, we can anticipate and to some extent determine his actions" (Skinner, 1953, p. 6). In regard to point 1, each of these events may philosophically be subsumed under the category of "behavior" as discussed in the unique features section. In regard to point 2, and on a surface level, it would be unlikely that anybody would ever consider the application of information derived from the discipline of performance psychology if they did not believe it was possible to predict and influence people's behavior. Yet, as discussed earlier, when "influence," theoretically and pragmatically, actually becomes "control" (control via specifiable conditions), many are turned off due to the implications of being stripped of notions of being "free" and having the agentic "will" to act. These notions are related to the concept of "intention," which does not cause behavior. "Intention" instead is a product of language or verbal behavior or quality of behavior, a quality often involving a situation in which it has become customary to engage in a behavior not simply for the act itself, but primarily for an outcome that has followed in the past. This sentiment, formerly a massive barrier to a thoroughgoing science and profession of psychology, presents itself in the study and application of performance psychology today and is neutralized by a radical behavioral reframing.

A Useful Reframing: Behavioral Science of Performance

Skinner (1953) said, "In every field in which human behavior figures prominently—education, government, the family, the clinic, industry, art, literature, and so on— we are constantly changing probabilities of response by arranging reinforcing consequences" (p. 73). This same objective certainly applies to the realm of performers, where human behavior figures quite prominently. Within the broad field of performance psychology, the focus of the remainder of this paper will be on applied or clinical performance psychology, particularly the aspect of performance excellence or excellent performance. Additionally, the focus could be renamed as a behavioral science of performance, which may help with looking through the particular radical behavioral lens that enables further zooming in on excellent performance. Much effort has been put forth in the past to studying and attempting to change the frequencies of specific athletic behaviors by intervening on "variables" which are explanatory fictions. For instance, a basketball player makes a game-winning free throw because she "is confident" or "has a great deal of confidence." A baseball player increases the frequency with which he gets on base (emerges from a "slump") because he "is resilient" or "has a great deal of resiliency." The behavioral science of performance appeals not to such explanatory fictions as "confidence" or "resilience" as "causing" improved performance. The behavioristic conceptualization is that "confidence" or "resilience" relate to private events yielded by repeated practice, particular schedules of reinforcement, and one's personal history with both. Furthermore, the behavioristic conceptualization appeals to explanation, prediction, and influence of frequencies of behavior by identifying independent variables in the environment of the individual *or in the individual's environmental history* and analyzing their functional relation to dependent variables –

specific performance behaviors. So, for example, reproducing the specific schedule of reinforcement responsible for "thinking confidently" / "feeling confidently" is a direct manner of instilling confidence. This is the crux of a radical behavioral/functional contextual definition of excellent performance. In simple terms, this definition of the theory sums up to the following: behavior is controlled by the environment, so to produce excellent behavior or performance, the environment must be controlled in specific ways as much of the time as possible.

Furthermore, this definition is tied to the unique context of the performing individual, meaning what is excellent for one individual in a given situation will be different from what is excellent for another individual in the same situation; and, what is excellent for an individual in a given situation will be different from what is excellent for that same individual in a later form for the same situation. When working with a performer, an experimental attitude noted by the following can be useful: "No two organisms embark upon an experiment in precisely the same condition nor are they affected in the same way by the contingencies in an experimental space" (Skinner, 1966, p. 20). A contextual view of excellence in this way takes into account individuality and implies that ongoing improvement through constantly/subtly refined behavior is a goal. It is consistent with the goal of helping people "perform in the upper range of their capabilities," from the definition mentioned earlier of what a sport psychologist does and it turns one's attention to moving that range to the highest limit for the individual.

Theory of Performing "Excellently": Elimination of Breakdowns & Promotion of the Excellent Environment

The theoretical paradigms of performance psychology most in line with the radical behavioral perspective at hand have been described in Dickinson (1977), Martin (2015), and

Luiselli & Reed (2011). Though Luiselli & Reed (2011) and Martin (2015) are more modern takes on sport psychology with performance excellence in mind and Dickinson (1977) is a classic behavioral perspective on sport participation (with excellence potentially implied at times), none of them explicitly capture in a comprehensive way the influence of the environment on behavior and how the environment may be influenced to promote excellent performance behavior. An exhaustively comprehensive behavioral system of intervention would target an individual's behavior at every level of life – the complete social structure involving parenting, education, work, and leisure. A society like this would be a sort depicted in Skinner (1948) in the community named Walden Two. Such an extensive, idealistic program is unfortunately too unlikely given the current status of American society, though it would be the kind of place where the absolute upper limit of an individual's performing could occur.

The analysis of performing excellently begins the same as any other analysis of behavior – with a look at the environments and contexts in which the behaviors of interest occur. When considering a set of behaviors so complex as those that comprise excellent performance, the look at the environments and contexts is extensive and emphasis is placed on designing, structuring, and maintaining the independent variables. The aims of a Walden Two-type program can still be implemented to work with adequate reach toward excellent performance in a profound way as long as the environments are influenced enough times in the right ways. Engineering an environment for performing excellently presents two aims: 1) eliminating or reducing the roots of issues that lead to "breakdowns" in performing; 2) implementing the conditions under which a more ideal process can occur. Some of the aspects, though integral to the process, do not so neatly fit into aim 1 or aim 2, due to their reciprocal nature. In other words, by removing the

conditions which lead to a breakdown, you smooth the path to excellence; by smoothing the path to excellence, you avoid the conditions which lead to a breakdown.

Elimination of Breakdowns

Performance breakdowns may be categorized into the following areas: psychological, cognitive, emotional, or psychophysiological inhibitors of performance. If a person is having a psychological (i.e., behavior-environment relation) breakdown in performance, it means her behavior in conjunction with the immediate environment is weak for some reason. This would include, for example, improper or inadequate biomechanical/motoric or physiological preparation. If a person is having a cognitive breakdown, it means she is engaging in ineffective self-talk (i.e., verbal behavior), have not experienced adequate training in proper attending to useful (i.e., reinforcing) aspects of the environment, or are affected by other stimuli that capture her attention. If a person is having an emotional or psychophysiological breakdown, it means stimuli in the environment have become, through direct experience or verbal training, aversive. This performer would likely engage in attempts to escape or avoid such stimuli.

Performers may experience these breakdowns in the *performance process* when one of the aforementioned inhibitors interferes with attending to useful aspects of the environment or interferes with responding to relevant stimuli by executing a motor movement. Performers may experience these breakdowns in the *developmental process* when they face competing reinforcers (i.e., a conflict in motivation), when they experience too much aversive control (or too little a volume or intensity of graduated adversity), or when they are not afforded enough opportunity to practice. Clearing up the issues in the developmental process and focusing on the aspects involved in the following section on promoting an excellent environment would likely obviate breakdowns in the performance process.

A conflict in motivation may occur for a performer when she must choose between multiple things she wants to do (positive reinforcers) or between something she wants to do and something she *has* to do (positive and negative reinforcers). The solution is to create an environment where (a) one option is simply not available (e.g., watching television cannot be chosen over playing the violin if a television is unavailable); (b) where satiation of the conflicting behavioral function can occur (e.g., if watching television provides entertainment, provide entertainment via another form or in a dose which may then allow other behavior); (c) where incentives (i.e., positive reinforcements) are in place from the very beginning to do what she *has* to do; or (d) where aversive verbal functions are linked up to one thing and reinforcing verbal functions are linked up to another (e.g., "television can be relaxing but can get boring quickly, but on the other hand you can play your favorite song and learn a new song with the violin"). What is key here is implementing no aversive control, such as "demanding" or "forcing" her to do something or "punishing" her for doing something. There are several reasons for this, the first of which is that "punished behaviors do not lose their strength; they merely wait until the punisher is not present for expression" (Karson, 2008, p. 90). Another reason is that avoiding or attenuating aversive events is naturally negatively reinforcing in the technical sense of the term. This is problematic because people have reactions to such control which may lead to the desired behavior but may also lead to behavior to avoid aversive control. In other words, a few people turn out to be able to handle such aversive control, while many others have fearful, rebellious, or submissive reactions to these painful or aversive stimuli – or they learn to administer such aversions to others (Skinner, 1948, p. 104). It also can lead to a case where a person ends up spending significant portions of their time avoiding the aversive control that may be intended by the controller to put them in contact with reinforcers, rather than being reinforced

or incentivized for the behavior in question. As another practical example, a parent or coach might say to an individual, "Remember how much fun you had and how much you improved last session?" rather than, "You need to go practice right now."

Similar reactions may occur when a person faces adversity in the performance environment that exceeds his current level of adaptation (i.e., "too much too soon"), which would be another way of saying the performer experiences a frequency or intensity of aversive stimulation or is not positively reinforced with adequate frequency. For example, if too unruly of an audience or too challenging of an opponent is experienced before the performer has been taught to handle it, fear reactions (escape or avoidance) may occur with similar audiences later on or physical harm may come as a result of too great a challenge. Another important case of too much adversity pertains to the verbal responses of those in the performance environment. Gardner and Moore (2006) present the common issue with which performers may be faced: behavior can be dysfunctional if "maladaptive schemas have been developed during the lifespan" (p. 13). The maladaptive schemas – similar to "intention," not causes of behavior and only inferences from behavior – developed in performers are ubiquitous in society as it is and these schemas are developed as a result of the ways people talk. Some key examples would be talking about certain people as being more highly valued than others, certain roles in the performance context being more exciting or reputable than others, or certain behaviors being more admirable (as opposed to focusing on effectiveness) than others (e.g., "you gotta play through the pain"). The people denoted "others" in the preceding sentence are the ones that may develop maladaptive schemas. A schema may also be defined as a way a person talks about themselves, others, or their behaviors, which often take the form of a rule. Rules serve to promote consistency in behavior, so that new behavior is consistent with how people have learned to talk

about themselves and the reactions they receive from others for talking in those ways. If people stop talking in ways that contribute to maladaptive schemas/rules, dysfunctionally rigid behavior will not result and a healthy variety of behavior and openness to contingency-shaped behavior will be promoted. Parents, coaches and athletic personnel, teammates, and consultants are tasked with avoiding certain ways of speaking. Discontinuing evaluative talk about performance altogether may be the best medicine. The alternative to evaluative talk may be referred to as "functional" talk; however, functional talk may still be conceptualized as rules which serve to promote consistency in behavior. This functional talk would include instructions on what to pay attention to or pointing out the consequences/results/feedback of certain behavior. For example, someone in the performer's environment might say "see how when you put your hand like that, you always catch the ball?" versus "tilt your hand diagonally and keep it close to the side of your face to catch the ball." Giving instructions may be beneficially avoided because "behavior that consists of following rules is inferior to behavior shaped by the contingencies described by the rules. Thus, we may learn to operate a piece of equipment by following instruction, but we operate it skillfully only when our behavior has been shaped by its effect on the equipment. The instructions are soon forgotten" (Skinner, 1977, p. 86; italics deleted).

Lastly, due to lack of resources or lack of time, a person may not be given enough opportunity to practice. A child or young adult may very well need to engage in behaviors that detract from opportunities to practice, in which case an ongoing conversation between the performer, the parents/guardians, the athletic personnel, and the consultant must focus on the likely consequences of how the performer spends time.

At the end of the day, when considering performance breakdowns, we may be best served to focus on the emotional responses that interfere with the development or execution of

performance behaviors: fear, anger, disappointment, sadness, jealousy, inferiority, frustration, failure, boredom, temptation, shame, etc. Each of these may be avoided by adjusting the environments (parental/familial, athletic, etc.) involved in the developmental process of performing. As a specific example, jealousy is eliminated by ensuring "a broad experience and many attractive alternatives" (Skinner, 1948, p. 47) or by eliminating the usefulness of jealousy, which only functions to combat a frustrating situation in a society which is competitive (Skinner, 1948, p. 93). If the environment, from as early an age as possible, emphasizes cooperating and affording many opportunities to obtain a desirable position, jealousy ceases to occur.

Promotion of the Excellent Environment

An individual's direct experience of the environments that give rise to excellent performance behavior could begin at birth. Yet the design of these environments could begin long before and involve key starting points. Furthermore, these environments could, in theory and in practice, always be geared toward becoming more excellent – the notion of constant experimentation. More realistically, the promotion of the excellent environment may have to begin later on in an individual's life; regardless, the environment can build off previous environments experienced as reinforcing and have other relevant independent variables present or absent. Some minimum starting points that would need to be in place would be the following: 1) certain reinforcing stimuli must be made available in the immediate physical environments (e.g., the individual must have easy physical access to settings conducive to performance and in which reinforcing aspects of performance are present); 2) sacrifices will need to be made to some extent in terms of how a performer's time is allocated; 3) key personnel – parents /guardians, performance/athletic personnel, and the consultant – must be ready to coordinate efforts in

influencing the environment, particularly with directing the performer's attention to direct consequences/feedback from their behavior.

The world of sport and performance has come a long way from saying to performers, "let's see what you're made of," but still has a long way to go before the more important issue at hand is, "let's see what your reinforcement history has been." Dealing with this issue is what sets a performer on the path to excellence. And the earlier people in the performer's environments are considering this, the more accessible is the knowledge about the performer's reinforcement history.

The physical environment.

When considering the early environment of a young performer, the keys to keep in mind are physical stimuli, primary positive reinforcers, conditioned positive reinforcers, and conditioned negative reinforcers (i.e., aversive stimuli). If beginning intervention with an older performer, positive and negative reinforcers can be assumed or determined by observing what the individual gravitates to/engages with and what the individual avoids, respectively.

Physical stimuli that must be present in the environment must be objects that are similar to the objects that will be present in the performance environment throughout the lifespan of a performance career. As a most basic example, a ball must be present for an individual to become a performer in a "ball sport." Additionally, people will most often be present in performance environments, so people must be present in the environment as individuals practice. Both the presence of objects and people can be systematically and gradually changed in quality and/or quantity to help performers become acclimated to the exact conditions in which they must perform.

Having an effect on the environment is the key positive reinforcer involved with developing performance behaviors because having an effect on the performance environment is crucial to success. From a theoretical standpoint, "having an effect" may be considered to be the key generalized positive reinforcer according to the following analysis: "One kind of generalized reinforcer is created because many primary reinforcers are received only after the physical environment has been efficiently manipulated...we are automatically reinforced, apart from any particular deprivation, when we successfully control the physical world" (Skinner, 1953, p. 77). The above analysis may lead some to believe that controlling the physical world (i.e., having an effect), must be followed by a primary reinforcer in order for the behavior to increase in frequency. Yet it appears that controlling the physical world results in important stimulation for the individual. The importance of such stimulation is often forgotten in team sports, where the stimulation of having an effect on the physical world becomes contextualized in a way in which the reinforcing effects of some behaviors, such as practicing simple technique, are lost when pitted against more glamorous behaviors with more conspicuous reinforcement. Still, in this process of controlling the physical world, "it is possible...that some of the reinforcing effect of 'sensory feedback' is unconditioned. A baby appears to be reinforced by stimulation from the environment which has not been followed by primary reinforcement" (Skinner, 1953, p. 78). Another important theoretical point arises from the observation that the effect or feedback from the environment that may stimulate the individual and be positively reinforcing is never perfectly immediate. However, as differential reinforcement occurs as a result of differing feedback over many trials, the kinesthetic sensations that are coordinated with success become conditioned positive reinforcers, which may be more valuable to a performer. The "feel" of the physical behavior that results in the success becomes the goal for a performer (Skinner, 1953, p. 96). This

is akin to the familiar sport psychology concept of pursuing and reinforcing a specific behavioral process rather than directly pursuing an outcome, as a desired outcome without the most effective behavioral process (e.g., proper technique) will be unlikely to lead to long term success. The "feel" of a behavior described above is theoretically considered a conditioned reinforcer.

As other conditioned positive reinforcers will likely result in the midst of a performer engaging in and with a performing environment, such processes must be taken advantage of by those around the performer. Skinner (1953) explained that "the emotional effects of music and painting are largely conditioned" (p. 56). The same is true of sport and performance domains, and when performance activity is paired with certain emotional states, the performance activity takes on the psychological functions of the emotional state. Furthermore, when the performance activity is followed by certain responses, emotional reactions result in the performer. The emotional states in question can be categorized as aversive (e.g., angry, anxious, embarrassed, etc.) or appetitive (e.g., interested, joyous, safe, etc.). Being observant of these emotional states in the performer and observant of the reactions that bring about these emotional states in performers allows for the effective use of building a healthy and effective relationship between the performer and the performance context. Lastly, it allows for the effective eliminating of unhelpful emotional reactions, such as being able to reduce fear of aversive stimulation in performance by helping build a tolerance and by demonstrating ultimate safety even after temporary or momentary aversive stimulation.

Sacrifices.

It is a simple fact that an individual requires a significant amount of time to engage in behaviors related to their performance domain in order to excel. Given the limitations of time, the time spent in behaviors unrelated to a performance domain must be optimized (i.e., allocated

not too much or too little time) and performance-related behaviors maximized without physically exhausting the individual, causing satiation, or causing aversive emotional reactions. It is in this sense that sacrifices must be made. As an example, the time an individual may spend drawing or painting may be "sacrificed" for time spent doing something else; unless, of course, there is interest in this individual excelling at drawing or painting. Allocation of time in this way is consistent with the Ericsson's (1993) notion of 10,000 hours of deliberate practice leading to expertise. This roughly breaks down to 20 hours per week for 50 weeks for 10 years. The other 148 hours in each week must be monitored to facilitate (or at least not impede on) the 20 hours of performance behaviors. Certain schedules of reinforcement are likely to produce much more than 20 hours during which the individual is engaged in practicing/performing, so the schedule must be designed to raise the number of hours to *more or less* 20 without exhausting, causing overly frequent satiation, or aversive emotional reactions. Furthermore, in the current argument, it may also be the case that these 10,000 hours must include proper attending by the performing individual, particularly attending to the immediate physical environment and their effects on it.

The behavioral analysis of sacrificing time spent in some behaviors to allow for more time spent in other behaviors involves the physical environment (as described above) and reinforcement procedures. Establishing the absence of reinforcement for certain behaviors will ultimately lead to the elimination of time spent engaging in these behaviors. This is the process known as extinction. Yet the behavior may be kept to a minimum much earlier by simply making sure certain aspects of the physical environment (e.g., television shows, social media) are never present. The consultant may come across a case in which an individual has experienced reinforcement for two (or more) behaviors – one which may be more likely to improve skilled behavior in a performance domain and one which may be unlikely. At this point, "sacrificing"

involves the behavior of choosing among alternatives. The behavior of choosing is under the control of concurrent contingencies, where behavior toward one alternative may be reinforced, while in the moment access will be lost to the other alternative, the procedure of negative punishment (i.e., the removal of a reinforce). Thus, choice behavior is powerful, as it involves positive reinforcement and negative punishment together at once.

Coordination of key personnel.

Keeping in mind the environment controlling the individual's behavior, the performances of the individual must be intentionally influenced by as many people as possible in terms of reinforcement and modeling, including verbal elements. The likely people involved in this process would be parents/guardians, coaches (technical/tactical, physical/strength & conditioning), and health care providers (physician, nutritionist/dietician, consultant). These people must work together to monitor fluctuations in deprivation and satiation (and adjust discriminative stimuli accordingly), adjust the introduction and withholding of reinforcing stimuli, and contribute to verbal behavior that is conducive to performance (e.g., providing reminders to attend to the immediate environmental effects of the individual's behavior).

Consulting Process & Consultant's Tasks

The consultant is integral in the programming of environments brought to bear on performers. These environments may be athletic, artistic, musical, medical, etc. Beyond assistance with the design of such environments, the consultant must be a staple in the necessary ongoing maintenance and changing of the environment. The consultant is ultimately responsible for weaving together the efforts of everyone involved in the implementation of a program of excellent performing.

General consulting process outline/example.

A general overview of the consulting processes/tasks is depicted in these steps: the consultant observes events that precede and follow behavior, ensures the continued appearance of the events that lead to more skilled behavior, and experiments with implementing new conditions or variables that lead to more skilled behavior. Additionally, the consultant predicts performance breakdowns that may occur, setting up the environment so that these breakdowns do not come about or can be increasingly tolerated, and intervening in the appropriate ways if breakdowns do happen to occur. These steps will be most effectively taken when the consultant is able to spend as much of their time as possible "on-site" with performers, ideally being with the performer from as young an age as possible when the individual shows interest, or interest is developed, in a physical activity/performance area and remaining with them as they progress in this area. On the point of an individual being interested, it is necessary to consider that interest is maintained or increased by schedules of reinforcement. Additionally, parents/guardians and consultants must consider how to capitalize on this relationship between interest and reinforcement by, for example, keeping in mind that individuals born in months that make them the youngest in their cohort for organized performance activities may experience less frequent "natural" reinforcement than their agemates on the older end of the cohort. And, on the other hand, predicting that an older agemate might more readily experience reinforcement in performance, opportunities must be provided accordingly. The general process would be the same even in the more realistic case of a consultant beginning to work with an adolescent or adult.

The consultant would also focus on optimizing the influence that other performance personnel (e.g., coaches, trainers, peers) have on performance behavior. The consultant would collaborate with these personnel in determining establishing operations (i.e., conditions under

which the individual is more or less likely to engage in certain behaviors) and schedules of reinforcement, and making sure opportunities/situations are available to build various knowledge, skills, and abilities. These processes/tasks will be elaborated below, but must also be preceded by preliminary discussions and agreements between the consultant and performance personnel.

The beginning of the program for excellent performing.

The program for excellent performing could be accurately described as an intensely deliberate program. The deliberateness could still be distasteful for some. Though, to reiterate, the deliberateness is tied to the fact of environments causing behavior. Since this is the case, the only choices are between thoughtless constructions of environments and deliberate construction of environments. Thus, embracing deliberateness is the answer. Such an embracing details that there is no option for "freedom" in the physical science sense of the word, yet deliberate construction of environments can and must include construction of environments that promote civil liberties.

The consulting process described in the preceding general example may begin as early or as late as parents/guardians or athletic personnel choose. Once the path to excellent performing has been chosen, it must be discussed first and foremost that the individual will come to behave (i.e., perform) as a result of antecedent and consequent experiences with its environment. This must be translated in a way that parents or guardians are able to understand, likely something along the lines of "environment controls behavior," or communicating that people are always behaving because their behavior "does something" for them, or discussing how it only makes sense to consider how people's behavior lies in the influence of others or the environment for if it didn't it would be futile to go about helping anyone with anything. Many consultants speak of

the importance of "buy-in" with individuals and teams of performers, yet the buy-in from people who are in positions to influence the performing individuals most frequently is more vital. The other over-arching message to discuss with parents/guardians, coaches, etc. is that the more involvement there is from all personnel, the more likely it is that the individual will approach the absolute upper limit of their performance potential.

Provision of opportunity.

An excellent performer is a performer who executes an extremely high level of skill or ability in the "usual" performance situations, but also in unusual performance situations. A consultant may ensure that a performer is getting enough experience with all kinds of situations. Early in the development process, a consultant also needs to ensure that a performer has many opportunities to build different skills. For instance, a child interested in baseball needs to have an environment conducive to throwing, using a bat, using a glove with balls that are rolling and in flight, and running and sliding in grass and dirt. The important thing here early on is not that these activities are forced upon the child, but available and made attractive by way of operant and respondent conditioning. On the other hand, a consultant must also provide opportunities for time away or recovery from fatiguing performance activities. The more these recovery activities facilitate later performance activities, the more excellence will be enhanced. This is equally true for the goal of becoming an excellent person as it is for becoming an excellent baseball player, dancer, surgeon, etc.

Influence on personnel.

The key influences on others that a consultant may have in order to promote excellent performance are (a) teaching behavioral techniques; (b) enhancing the performance of people who work with performers (e.g., coaches, trainers, sports medicine personnel); (c) monitoring

how performers come to be influenced by verbal rules; and (d) by ensuring the absence of unnecessary negative reinforcers and the presence of positive reinforcers. It must be remembered that the consultant will be in the environment of the performer and in the environment of the performer's people, so changes in what the consultant does affect the performer's environment.

A) Maximizing the possibility that the coordinated efforts of key personnel will shape the individual's behavior in the most ideal way will involve the personnel correctly executing behavioral procedures or processes (e.g., establishing operations, shaping by successive approximations, prioritizing variable ratio reinforcement schedules over fixed ratio schedules, extinction, etc.). It is one necessary task of the consultant to provide examples of such procedures and reinforce correct implementation. The consultant must continuously reiterate to key personnel (and to the performer) that the behavior of the performer is occurring as a response to something that is happening or stimulus functions set up by something that has happened in the environment, while also reminding personnel that the individual may be responding verbally or to verbal stimuli. With a repertoire of basic and deepening behavioral techniques and procedures, all personnel can work toward shaping and maintaining a set of behaviors that will give rise to performing excellently. A sample from this set of behaviors would include engaging directly with performance equipment, attending to directly-acting contingencies, and the reciprocal behaviors of taking care of one's body and enduring the conditioning of one's body that may be naturally aversive.

B) The people who frequently work with performers and provide a specialized service, such as a strength and conditioning coach or a nutritionist, must also be able to perform excellently so that they can have the greatest positive impact on a performer. A consultant can monitor the behavior of these people to ensure progression of their skills as well, whether by

making sure these people can put themselves in contact with learning resources, natural reinforcers of their skill, or by adjusting verbal rules (i.e., reinforced ways of talking about behavioral contingencies) that these people may extend to performers.

C) The targets of influence for a consultant will be mainly the social environment, in which certain verbal rules link necessary aversive stimulation with future reward or success and other verbal rules bring attention to natural reinforcers, such as successful working/slight differences in improved skill, having an effect on the physical environment, physiological stability, and cooperation. What this may look like in practice would be adjusting the verbal rules of all people in the athletic environment. As Skinner (1953) states, "Verbal behavior is successful only when it generates suitable behavior in the average listener" (p. 97). Thus, a consultant would frequently be dealing with the questions, "Is this verbal behavior working well? Would different verbal behavior or verbal rules work better?" At times, the useful answer to this question may be that the absence of verbal rules is preferable to the presence of rules because, according to (Skinner, 1969):

> Rule-governed behavior is...never exactly like the behavior shaped by contingencies... the resulting behavior may resemble that which follows exposure to the contingencies...but the controlling variables are different, and the behaviors will not necessarily change in the same way in response to other variables (p. 150-151).

A less technical, more concrete example from Chuang-tzu (4th c. BCE/1981) demonstrates that beginning butchers know about oxen and sharpen their blades every week; intermediate butchers apply sophisticated butchering methods and sharpen their blades every month; an expert butcher

lets the animal in front of him guide his blade rather than an idea about anatomy, and he never has to sharpen it.

D) Other personnel involved with the performer will likely notice that a performer will have to overcome adversity in order to effectively and efficiently work toward performing excellently. These personnel will likely also have some experience with the quickness in which behavioral change is brought about by aversive control (i.e., motivating by fear or avoiding punishment). It will be the task of the consultant to explain the often unforeseen drawbacks and detriments of an aversive control approach and outline the importance and structure of training for toleration of performance adversity through positive reinforcement. This process is described below and in considered in conjunction with consideration of establishing operations and schedules of reinforcement.

Establishing operations & schedules of reinforcement.

Another vital task of the consultant is to observe and implement establishing operations and determine schedules of reinforcement. The purposes of keeping an eye on establishing operations are to identify boredom, physical fatigue, or lack of cooperation and prevent it from growing, as well as to make sure people are physically and mentally ready to perform. The purpose of determining schedules of reinforcement is to maximize time spent engaged in quality behavior (during and between behavioral bouts). An effective schedule of reinforcement also allows the performer to experience and absorb setbacks; basically, it is an intermittent reinforcement schedule that produces what would be called resilience or perseverance rather than despondency when a setback occurs amidst a schedule of nearly constant reinforcement. This will be further discussed in the following section dealing with performance adversity training.

Consultants may keep an eye on boredom, physical fatigue, or lack of cooperation by keeping track of how much time has been spent on an activity, what the activity is, how much time has elapsed since a previous reinforcing activity (e.g., eating, sleeping, or an enjoyable activity), and how people are treating each other. The other side of how a consultant should manage establishing operations is by making sure a performer is prepared, ready, or wanting to perform. Practically, this would mean that a performer has recently experienced something like physical therapy to prepare their body or has recently experienced something like a psychological intervention that turns the performer's attention to reinforcing aspects of performing (e.g., "How can you most enjoy the full two hours of playing hockey today?"). This kind of psychological intervention shows the consultant what kind of reinforcers must be present when that performer plays hockey later on.

In the previous example, now that the consultant knows what is reinforcing to the performer, it is the consultant's job to make sure these reinforcers are present at a frequency that actually does maximize hockey playing behaviors. Too much of the reinforcement too soon or too easily (too little behavior) may lead to disengagement, while a lack of reinforcement given the occurrence of desirable hockey playing behavior may lead to frustration or discouragement. The consultant would also do well to determine reinforcers that are relatively independent of the momentary deprivation of the person, such as money (Skinner, 1953, p. 79). Reinforcing with money on any schedule other than fixed interval would likely be fruitful.

Performance adversity training.

A task that could be called "performance adversity training" must also necessarily be overseen by the consultant. The main facet of adversity training from a radical behavioral perspective for performing excellently would be to reinforce the tolerance of aversive stimulation

involved in performance domains. In practice, reinforcing tolerance would actually be reinforcing the individual for remaining in the ongoing stream of performance behaviors that would be occurring if the aversive stimulation were not present. In layman's terms, remaining in this ongoing stream of performance behaviors would be best described as "staying focused."

Other performance personnel would be included in the process of adversity training. For instance, it is the strength & conditioning coach who knows the proper dosing and progression of tolerating aversive stimulation related to physical conditioning. The consultant would be present and active in a role of facilitating proper shifts or maintenance of attention. The consultant, knowing the individual's history as much as possible, may be in charge of programming for aversive stimulation such as noise, presence of large crowds, weather, losing a turn, delayed gratification, or uncommon obstacles – the reactions to which, have not yet been extinguished or require a greater level of tolerance (i.e., ability to pay no attention to the aversive stimulation). Skinner (1948) has described the importance and utility of a "sort of psychological concealment [of aversive stimulation]...by paying no attention" (p. 99). Paying no attention is brought about by very gradually increasing the intensity of the aversive stimulation in question, while reinforcing the maintaining of attention on directly-acting performance contingencies.

Intentionally increasing stimulation which is annoying/frustrating, frightening, or painful would naturally appear inhumane at first glance. However, the process is different than using aversive control to establish a behavior. In establishing a behavior via aversive control in performance domains, such as using threats of what will happen if behavior does not occur, the idea is that if the behavior does occur and is reinforced by escaping the threat, the behavior will also lead performance success. If performance success does not follow from the behavior under aversive control, it will only lead to a state of anxiety and, possibly, self-loathing in the

individual. Thus, the process of intentionally using aversive stimulation to develop physical and emotional tolerance and (re)focusing behaviors is a significantly different process and the long-term goal must be kept in mind. In other words, the stimulation used in performance adversity training is never to be used "in the hope of repressing or eliminating undesirable behavior" (Skinner, 1948, p. 104). The purpose is ultimately compassionate. It allows performers to "prepare for adversities that are beyond our control" (Skinner, 1948, p. 105). Beyond this, performers are set up to experience many other benefits. Over the course of becoming decreasingly affected by aversive stimulation, performers "get the satisfaction of pleasant and profitable social relations...They get immeasurably increased efficiency, because they can stick to a job without suffering the aches and pains which soon beset most of us. They get new horizons, for they are spared the emotions characteristic of frustration and failure" (Skinner, 1948, p. 102).

Summary

The essential premise of a radical behavioral theory of performance excellence is that the environment controls behavior. To pursue the development of excellent performance, the environment must be made excellent. The pursuit may be fraught with difficulties, but likely less difficulties than are currently present when excellent performance is pursued through other means. So much of the field of performance psychology involves the honing of psychological skills to undo the negative effects of one's learning history. Performance psychology consultants may teach focus to guide a performer's attention away from stimuli that provoke fear or anxiety. Why not eliminate fearful or anxious reactions by controlling the environment of the performer over her lifespan? To realize that human behavior is always under the influence of both historical and momentary contingencies, no matter what is to open the door to the possibility of

implementing deliberate behavioral control for the health and happiness of people. It is a practice that upends notions of freedom, but it is a practice that can be carried out positively, non-coercively, through the use of positive reinforcement. Where in the past an athletic coach has stated, "Let's see what you're made of," a performance psychology consultant can say, "Let's see what this environment is made of."

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