

## **WHY THE RADICAL BEHAVIORIST CONCEPTION OF PRIVATE EVENTS IS INTERESTING, RELEVANT, AND IMPORTANT**

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**ABSTRACT:** For radical behaviorists, talk about “private events” could be about any of four things: (a) private behavioral events, (b) physiology, (c) dispositions, or (d) explanatory fictions. Talk about private events as behavioral engages the influence of feelings, sensations, and covert operant behavior. Analyses based on private behavioral events allow radical behaviorists to understand how those events contribute to contingencies controlling subsequent operant behavior, whether verbal or nonverbal. Talk about private events in physiological terms risks confounding explanatory categories. Although physiology necessarily participates in behavioral events, physiological events are not the same type as behavioral events, public or private. Rather, an organism’s physiology is a material cause. To portray physiology as an autonomous, initiating cause, as traditional psychology often does, creates a variety of explanatory problems. Talk about private events as dispositions does not reflect anything literally private. Rather, dispositional talk reflects the probability of behavior engendered by contingencies. Dispositional talk is about effects, instead of causes or intervening variables as traditional psychology often portrays them. Finally, some talk ostensibly about private events is little more than an appeal to explanatory fictions. This talk, common in traditional psychology, owes its strength to the everyday social reinforcement inherent in “folk psychology.” The talk represents a surrender to mentalism and methodological behaviorism, notwithstanding any claims that it is “theoretical.”

*Key words:* dispositions, explanatory fictions, mentalism, methodological behaviorism, neuroscience, private behavioral events

### **Introduction**

Structurally, private events are held to be inside the skin in some sense and accessible to only one person. Functionally, private events are held to be causally

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**AUTHOR’S NOTE:** I have titled my comments “Why the radical behaviorist conception of private events is interesting, relevant, and important.” I hope that I will convince you that the radical behaviorist conception of private events is, in fact, interesting, relevant, and important, for I think that the conception of private behavioral events is one of the most important features of radical behaviorism as a philosophy. This article is an expanded version of a symposium presentation at the convention of the Association for Behavior Analysis, San Diego, California, May, 2007. Please address correspondence to J. Moore, Ph.D., Dept of Psychology, UW–Milwaukee, Milwaukee, WI 53201; Tel. (414) 229-4746; Email: jcm@uwm.edu.

related to subsequent behavior. However, different theoretical positions in psychology hold correspondingly different positions with respect to both structural issues—the dimensions of private events, and functional issues—and the nature of their causal relation to subsequent behavior.

A brief review of representative viewpoints in the history of psychology illustrates that concern about private events is longstanding. For example, in the late nineteenth century, such nascent viewpoints in psychology as Wundt's voluntarism, Titchener's structuralism, and American functionalism struggled heroically to distinguish themselves from philosophy and physiology and to become sciences in their own right. In keeping with the social-cultural assumptions of the time, these viewpoints assumed that the phenomena of mental life were the principal subject matter for psychology, rather than behavioral events. At best, behavioral events were assumed to be a subordinate subject matter, such that an understanding of behavioral events would come about once the workings of the conscious mind were revealed. As many readers know, structural psychologists used reaction times, ratiocinations, various forms of complex judgments, and especially introspective reports to determine how sensations, images, and feelings were organized in mental life. Only adults could serve as subjects. These subjects were extensively trained so that they would only describe their mental experiences, rather than make inferences about them and thereby commit the "stimulus error." Functionalists were similarly concerned with the various constituents of mental life, although more with their functional benefit than their organization. The various positions debated whether imageless thought was possible and whether reaction time was faster if one concentrated on the stimulus or the response. Throughout, an important challenge was whether the way these early viewpoints dealt with mental life could legitimately be called "scientific." In response to this challenge, early researchers argued that because they conducted research with well-trained subjects under well-controlled conditions and carefully recorded the data, their investigations of mental life were, in fact, empirical enough to count as being scientific.

Despite the self-confident claims of researchers associated with these early viewpoints, history suggests that the viewpoints were regrettably problematic. For example, their supposed "findings" tended to be unreliable and incapable of generating agreement. In addition, their findings did not lend themselves comfortably to practical applications. Introspection seemed particularly questionable as a method. Skeptics further raised concerns that science is traditionally held to be empirical. It deals with phenomena that are publicly observable, such that they can be counted, measured, weighed, or otherwise objectively recorded on counters, meters, dials, pointers, or scales. By definition, the private events of mental life are not publicly observable. They are "subjective," not "objective." Thus, the status of a science purporting to examine private events raises special questions. Can an understanding of private events, not to mention the behavior that supposedly follows from those events, even be achieved through the methods of science? Aren't the various problems just a symptom of trying to make a science out of something that is, by its very nature, incommensurate with

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science? Shouldn't researchers just acknowledge the importance of private events, then humbly defer either in part or whole to another mode of inquiry, such as philosophy, if they want to investigate them more deeply? Indeed, these reservations about the "scientific" status of private events, mental life, and even the possibility of a science of behavior continue in many quarters.

The historical record indicates that behaviorism grew in part from concerns about empiricism, reliability, observability, objectivity, and agreement that were expressed during the first quarter of the twentieth century, for example, in the writings of John B. Watson (e.g., 1913). Consequently, behaviorism is commonly thought of as a position that says nothing about private events and talks only about publicly observable relations between publicly observable stimuli and responses, all in an effort to avoid the problems of the earlier viewpoints based on introspection. By virtue of its foundational emphasis on empiricism and publicly observable data, behaviorism is thought to have stronger credentials than introspective viewpoints on which to lay claim to status as a science.

To be sure, Watson was clearly interested in empiricism, reliability, observability, objectivity, and agreement. However, even though Watson (1913, p. 174) eschewed "centrally initiated processes," he (1925) talked at great length about some of the topics that had previously been the province of introspective psychology. He viewed them as implicit, respondent relations involving punctate stimuli arising from verbal, visceral, and motor systems. These phenomena were peripheral rather than central, but they were not publicly observable, at least without instrumental amplification. One example is Watson's view of thinking as subvocal speech related to implicit activity in the larynx, jaw, mouth, lips, and tongue. Another is Watson's view of lust as tingling in the external genitals.

Despite its early benefits, Watson's classical S-R behaviorism had difficulty accounting for the variability and apparent spontaneity of behavior. Sometimes particular stimuli and particular responses just weren't correlated in the way that classical behaviorism required. In the face of these difficulties, researchers began to propose a wide variety of internal, causally effective antecedents to overcome the restrictions of dealing with only publicly observable stimuli and responses in the mode of classical S-R behaviorism. These internal, unobservable factors better allowed researchers to deal with the matters of variability and spontaneity. One sense of "causally effective" is that of an autonomous, initiating power or force. An assumption of the autonomous, initiating power of internal factors is certainly a legacy of dualism, if not dualism itself, although outright appeals to dualistic causes were generally in the minority.

In the majority were appeals to another sense of "causally effective," that of mediation. By mediation is meant that external stimuli activate some intervening, internal process or entity (i.e., a private event) that is causally connected in a complex but systematic way to an eventual response, and the mediating process or entity is the proper focus of psychological science rather than the response itself. In other words, the response is functionally related to the mediator rather than the environment because the organism is held to be in direct contact with only the mediator rather than the environment. Interestingly, the origin and nature of the

mediators were never fully examined. Whether the mediators actually differed from dualistic causes was not clear. The extent to which the mediators differed from the acts, states, and so on of the introspective psychology that flourished some 30 or 40 years earlier was similarly not clear. In any case, appeals to a variety of mediating internal processes or entities became widely accepted as a satisfactory way to retain the virtues of classical S–R behaviorism but accommodate the variability and nominal spontaneity of behavior. The approach that developed based on mediation may be termed mediational S–O–R neobehaviorism to distinguish it from Watson’s classical S–R behaviorism, and this mediational form of behaviorism soon became dominant (Moore, 2008; see also Watkins, 1990, who raises concerns about mediation from a traditional perspective, although for radical behaviorism these concerns stop short of a decisive indictment).

As the story unfolded during the 1930s and 1940s, a major problem for mediational neobehaviorists was how to achieve and maintain scientific respectability when appealing to the mediating organismic entities. The solution was operationism. Mediational neobehaviorists came to render the intervening organismic entities as “theoretical terms” as opposed to observational terms referring to publicly observable stimuli and responses. Mediational neobehaviorists then “operationally defined” the theoretical terms by symbolically linking them to some publicly observable state of affairs in connection with which they were supposedly measured. A common approach was to operationally define the mediators by referring to classically conditioned physiological states (e.g., Mowrer, 1947).

In short, this conventional interpretation of operationism allowed mediational neobehaviorists to have their cake and eat it too. They could account for the variability and apparent spontaneity of behavior. They could avoid the liabilities of introspective psychology and generate agreement by linking their talk of private events to publicly observable events. They could maintain all their prior assumptions concerning the necessity of incorporating a wide variety of concepts about events taking place somewhere else, at some other level of observation, described in different terms, and measured, if at all, in different dimensions. They could conceive of the mediating private phenomena as “hypothetical constructs” that were distinctly nonbehavioral. As the twentieth century progressed, neobehaviorists could conceive of the private phenomena as computational states of cognitive information processing mechanisms or as metaphors framed in the language of neuroscience to further enhance respectability and face validity. Advances in technology meant that neobehaviorists could even record or take pictures of brain activity and argue that the massively processed data or images “explained” why humans might or might not engage in some form of behavior. Neobehaviorists could receive lots of supportive public attention from the many others who took it for granted that their viewpoint was essentially so correct that only the most obtuse person would argue against it. They could get privileged access to academic journals for their publications and to extramural funds for their grant proposals. They could get tenure and promotions and large merit pay raises at

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their institutions or agencies by calling their efforts “theoretical,” “hypothetical,” or “conceptual,” but still present themselves as aligned with the rigorous thinking promoted under the banner of behaviorism. Clearly, then, this dominant form of behaviorism has always been intimately concerned with private phenomena. Indeed, it is explicitly committed to dealing with a particular conception of them.

Skinner’s radical behaviorism also has something to say about private events. However, what radical behaviorists say and why they say it differ appreciably from what mediational neobehaviorists say and why they say it (Skinner, 1945, 1953). For instance, radical behaviorists talk in terms of operant behavioral processes and the control by consequences rather than linear antecedent causation with mediators from other dimensions. Radical behaviorism is, therefore, a thoroughgoing behaviorism that doesn’t appeal to events in other dimensions. Thus, just because both neobehaviorists and radical behaviorists have something to say about private events does not mean that all forms of behaviorism are equivalent. In any case, further examination of why the radical behaviorist conception of private events is interesting, relevant, and important will clarify the differences.

### **Private Events from the Standpoint of Radical Behaviorism**

Radical behaviorists call for the operational analysis of talk about private events to assess what that talk is about. For radical behaviorists, an operational analysis consists of assessing the factors that control the verbal behavior in question. This interpretation of operationism is based on a genuinely behavioral view of verbal behavior, and it differs significantly from the conventional interpretation that is based on a symbolic, referential view (Skinner, 1945). For radical behaviorists, then, talk about private events can be about (a) private behavioral events, (b) physiological events, (c) the probability of engaging in certain forms of behavior, or (d) explanatory fictions. An operational analysis will determine the extent to which these factors actually do control the talk in question as well as the role of the factors in contingencies controlling further operant behavior, whether nonverbal or verbal.

### **Talk about Private Events as Private Behavioral Events**

Some talk about private events is about bodily conditions, sensations, and feelings, or covert operant behavior, as those events occur in a context. This talk is about private *behavioral* events. An important implication is that for radical behaviorists, the concept of a behavioral event is not limited to something that is publicly observable (Moore, 2008). Radical behaviorists must then account for how environmental circumstances produce the conditions of the body in question, how the covert operant behavior assumes the form it does, and how the conditions of the body and the covert behavior acquire the effects they do with respect to subsequent verbal or nonverbal behavior. People can clearly be said to have feelings. What are feelings, how do they come about, and what role do they play in subsequent behavior? People can clearly be said to think. What is thinking, how

does it come about, and what role does it play in subsequent behavior? People can clearly be said to make introspective statements. What are introspective statements about? How do people come to make such statements? For radical behaviorism, the phenomena and processes in question are all behavioral, and answers are to be found in the behavioral dimension. Unlike statements in traditional psychology, these statements are not about causally effective antecedents from another dimension, as either initiators or mediators.

***Private Behavioral Events: Sensations and Feelings***

For radical behaviorists, there are two sorts of private behavioral events. The first sort concerns the influence of sensations and feelings. These events are internal, “inside the skin” in some sense, and inaccessible to others. What causes this sort of private event? These events are conditions of the body caused by unconditioned and conditioned respondent relations. What is their causal status, for example, with respect to subsequent operant behavior? The vernacular often has it that people do things because they “feel like it.” For radical behaviorists, feelings or sensations do not cause subsequent operant behavior in sense of an autonomous, initiating cause. Rather, the events or relations that cause the feelings or sensations also cause the subsequent operant behavior. For example, the feeling called anxiety does not cause subsequent behavior. Rather, the events and relations that cause the feeling called anxiety cause subsequent behavior. Similarly, the good feeling associated with a reinforcer doesn’t strengthen behavior; the good feeling and the strengthening of behavior are both caused by the reinforcer, and an effective identification of the causal sequence must go back to the reinforcer. Of course, the feelings or sensations participate in the contingencies by contributing to the discriminative control over the verbal behavior that describes the feelings or sensations. However, this view differs from one that endows feelings or sensations with autonomous, initiating, or mediational power to cause either verbal or nonverbal operant behavior (e.g., Catania & Harnad, 1988, p. 354).

The interesting, relevant, and important question is how do individuals come to verbally label sensations and feelings, or otherwise give introspective reports, given the problem of privacy (Skinner, 1945)? The problem of privacy may be summarized as follows. Verbal behavior develops through the differential reinforcement supplied by the verbal community. That is, an individual learns to label one color as red and another as green when saying red in the presence of a red object and green in the presence of a green object meet with approval from others. In this case, the antecedent conditions that will control the response are public. Both the verbal community and the individual are in contact with the red and green objects as antecedent conditions, and the verbal community can use the presence of the objects as a basis for administering the required differential reinforcement. However, in the case of verbal behavior descriptive of sensations or feelings, the verbal community operates at a disadvantage. The antecedent conditions are private, not public. The verbal community does not have direct access to an individual’s sensations or feelings. It therefore cannot reinforce talk

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about them based on direct contact with the appropriate antecedent conditions, as it can when the individual learns to name colors. Nevertheless, a moment's reflection suggests that individuals do learn to generate responses that are under the discriminative control of private stimuli. How does the verbal community supply the necessary differential reinforcement in this case? The answer is clearly relevant to parents, who might want to have their children accurately describe their aches and pains, so that the parents can provide some remedy.

For radical behaviorists, the verbal community can work its way around the problem of privacy and administer the necessary differential reinforcement in two ways. The first way is by relying on public accompaniments (Skinner, 1945). According to this way, the verbal community will reinforce talk of being in pain when there has been some publicly observable concomitant, as when an individual has received a forceful blow, or fallen and skinned a knee. The prevalence of this mode is evident in the metaphorical nature of pain talk. Speakers are taught to call the pains caused by sharp objects as sharp pains, those caused by dull objects as dull pains, and those caused by burning objects as burning pains. Excruciating pains come from (ex-) being crucified.

The second way is by relying on collateral responses (Skinner, 1945). According to this way, the verbal community will reinforce talk of being in pain when the individual grasps or rubs some obviously afflicted area. The act itself might be an unconditioned respondent or it might be related to negative reinforcement of pain relief.

A third way verbal behavior descriptive of feelings and sensations could develop is on the basis of stimulus generalization. Internal stimulation arising from overt events might initially acquire some measure of stimulus control over verbal behavior on the basis of public accompaniments or collateral responses as described above. Related forms of internal stimulation arising from publicly observable events might then exert stimulus control in later cases as a function of their resemblance to the original stimulation (Skinner, 1945). For example, consider how a speaker might come to say "I have a feeling of butterflies in my stomach." Speakers might initially learn to describe the sensation that occurs when a butterfly lands on their skin as light and fluttering. When the light and fluttering properties of internal stimulation in the stomach are similar to those caused by the publicly observable event of a butterfly landing on the skin, a similar verbal response will occur through the process of stimulus generalization. Thus, just as speakers learn to say "I have a feeling of butterflies on my arm" on the basis of the light and fluttering stimulation, they will say "I have a feeling of butterflies in my stomach" when stimulation with similar properties occurs in their stomachs.

The radical behaviorist argument is that as a result of these social processes, individuals learn to "know themselves" in an interesting and meaningful way, including the knowing of their own feelings and sensations. Introspective reports concern these feelings and the conditions that cause them rather than private autonomous, initiating causes from another dimension to which a speaker has privileged access. What then about the "awareness" of one's own feelings and sensations? In the sense that awareness also depends on particular circumstances,

individuals might not be aware that they are injured if the injury occurs in a life-or-death emergency, if the injury concerns a soldier who is fighting on the battlefield, or if the injury concerns an athlete who is involved in a competitive event. Similarly, an individual shuffling hurriedly through a stack of papers to meet a deadline might not notice the relatively minor discomfort associated with a paper cut on the finger until the individual notices a drop of blood. The demands of the current setting conflict with the awareness of the pain, such that the awareness comes only later, after the demands of the emergency or critical situation have passed.

Complicating the descriptions of feelings and sensations are the limitations of the nervous system itself. Human exteroceptive nervous systems are reasonably well developed, but consider the process of hearing. The typical range of human hearing is from 20 Hz to 20,000 Hz. Given these limits, individuals can't sense—let alone distinguish between—auditory frequencies of 25,000 Hz and 30,000 Hz because their exteroceptive nervous system doesn't allow them to come in contact with that sort of stimulation. Similarly, with respect to the interoceptive nervous system, individuals often have trouble localizing pains or giving other than metaphorical descriptions of pains. The interoceptive nervous system simply doesn't have enough nerves, or doesn't have nerves going to the right places, to allow individuals to come into contact with the precise nature of the stimulation. Individuals may well come up with elaborate descriptions of pains, but often those descriptions are based more on social convention or various metaphorical relations than actual contact with the condition of the body purportedly affected. The result is that both the problem of privacy, mentioned earlier, and the inherent limitations of the nervous system restrict the accuracy of many self-reports. It follows that the elaborate introspective descriptions in older forms of psychology, as well as in current forms for that matter, are not as veridical as they claim.

To be sure, the processes described above don't always work in the way the verbal community intends. Sometimes individuals learn to hold an area and moan and groan, and by so doing evoke sympathy from others. They learn they can avoid unpleasant tasks by pretending to be in pain and by engaging in a form of behavior that often is functionally related to pain, but in the present case is actually not. The terms "hypochondria" and "malingering" are typically applied to these cases. Similarly, neurotics achieve secondary gains by assuming the role of a "sick person" and having others sympathize with them. The importance of public concomitants in the discernment of pain by the verbal community is evidenced when malingerers are found out. They complain that they are too sick or in too much pain to be assigned to some demanding task, or even to get out of bed, but then are discredited when they are later discovered to be doing something equally vigorous but enjoyable. The collateral responses don't correlate with the verbal reports (Moore, 2008).



***Private Behavioral Events: Covert Behavior***

The second sort of private behavioral event concerns the influence of covert operant behavior (Skinner, 1945). Thinking is a convenient example. To think is to behave, but at a covert level. This sort of private event functions as a link in a causal chain of behavior. Again, these private events are not causal in the sense of an autonomous, initiating cause or a mediating process. Rather, they function as discriminative stimulation for subsequent behavior, either verbal or nonverbal, either public or private (Skinner, 1953, 1957).

These private forms of behavior are acquired in overt form, but then become covert. As covert forms of behavior, they are executed by same neuromuscular substrate as the overt form. However, they are smaller in scale, such that they are not ordinarily observable to anyone else (Skinner, 1953). To be sure, through instrumental amplification they may become evident to others. One currently intriguing example is when a computer-based transducer system translates brain waves so that they move a pointer on a computer monitor, such as might be involved in playing a simple computer game, or so that they move an artificial limb via “neural prosthetics” (Aaron et. al., 2006). However, no matter how well these events may be revealed in the laboratory, in the normal situation the forms of behavior are quite private, and their source and causal contribution need to be accounted for (Skinner, 1945).

Such responses become covert for any of several reasons. For example, the overt form might be punished. Reading aloud is punished in the library. Consequently, one reads silently. The covert form might be more efficient and labor-saving when compared with the overt form. One can often read silently faster than aloud. However, reading aloud might return if a punishing audience is not present and one is interested in sounding out a difficult verbal passage. The overt form might lack environmental support. One can write down a grocery list if one has paper and pencil. If one does not, privately reminding oneself what one needs to buy is just as effective. As a result, the behavior may recede to a covert or inchoate form, and even incipient stages can produce covert stimulation that exerts a discriminative effect.

How do individuals come into contact with the covert form of the behavior? The answer is that interoceptive and proprioceptive properties of the covert form resemble those of the overt, although reduced in magnitude. Individuals make contact with the covert behavior via interoceptive and proprioceptive nervous systems at the central as well as peripheral level.

According to this view, consciousness may be viewed as responding to one’s own behavior and the conditions of which that behavior is a function, rather than a mediating mental state. In many instances consciousness means self-descriptive behavior. It comes about when the verbal community questions what an individual is doing and why, and then reinforces appropriate responses. Introspective statements may well be comments on inner states, but those states are not causes in themselves, apart from the external circumstances that produce the states. Given that consciousness is created by social interactions, it follows that more precise

interactions can create more effective self-management repertoires, and more conscious individuals (Skinner, 1945).

What is the causal status of the covert behavior? Again, for radical behaviorism the answer depends on the meaning given to causal. The vernacular holds that thinking is variously an autonomous, initiating, or mediating cause of behavior, although the origin of thinking is not routinely specified. Radical behaviorism rejects these conceptions of thinking. At the very least, one has to identify the circumstances that caused the thinking. Rather, radical behaviorists argue that both the thinking and subsequent behavior are caused by the same circumstances. As suggested earlier, thinking makes its contribution to subsequent behavior through its participation in discriminative control. By thinking, one produces discriminative stimulation that adds to the multiplicity of stimuli that guide subsequent behavior. Again, however, one has to account for the source of the thinking as well as how the thinking might actually come to exert discriminative control.

In sum, covert behavior can therefore be just as relevant to the analysis of behavior as it occurs in context as is overt behavior. However, covert behavior does not necessarily occur in every instance of behavior. Even when covert behavior does occur, it may not be functionally related to subsequent behavior, either covert or overt. Nevertheless, when covert behavior does occur and when it does influence subsequent behavior, its occurrence and influence need to be accounted for. Radical behaviorism does so in terms of ongoing operant processes, consistent with the principles of a natural science. The radical behaviorist position is therefore not equivalent to mentalism for several reasons (e.g., Zuriff, 1985):

1. Private behavioral events are in the same dimension as public behavioral events; they are not in a different dimension.
2. Private behavioral events obey the same laws as public behavioral events.
3. Private behavioral events have the same properties as public behavioral events.
4. Private behavioral events are functionally related to publicly observable environmental variables and relations, behavioral variables and relations, or both; private behavioral events are not autonomous, initiating, or mediating in the traditional sense.

### **Talk about Private Events as Physiological Events**

Other talk about private events is about underlying physiological structures, pathways, and processes. These events are studied by neuroscience. They are investigated using the techniques and concepts of that discipline, rather than as inferences from observed behavior. With respect to an enthusiastic bridge player, the situation is not improved by pointing to the operation of brain structures in an fMRI as evidence justifying “theoretical” talk of a subjective mental state of “enthusiasm” that causes the individual to play and talk about bridge often. Indeed, to do so is an example of seizing upon physiological structures as proxies for

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causally effective antecedents from other dimensions. If anything, the states of physiological structures are effects rather than correlational evidence of the kind of mental causes to which traditional views might appeal.

To be sure, physiological information—for instance, about cortical structures as revealed in an fMRI—could conceivably be important. Information about the physiological processes that transpire in two “gaps” in a purely behavioral account is clearly relevant to an understanding of behavior. One gap is during an event, when a given stimulus leads to a given response. A second gap is between events, when one event affects the probability of behavior in future, similar circumstances. Information about physiological events during these gaps may help to identify new possibilities for prediction and control of behavior through an intervention. However, the physiological events studied in neuroscience are not the same type of private behavioral events in which radical behaviorists are interested. This view of the importance of physiological information differs from the traditional conception of saying that an fMRI provides evidence of causal cognitive mechanisms or states. Indeed, the traditional conception of causal cognitive mechanisms is related more to social-cultural ideas of autonomous, initiating, or mediating powers and forces than to modern scientific conceptions of the role of physiology (e.g., Bennett & Hacker, 2003; Uttal, 2001).

The point remains that as covert behavior of either respondent or operant character, private behavioral events are not to be “reduced” to physiology or activity of cortical structures, any more than any other kind of behavior is to be reduced to physiology or activity of cortical structures (see related discussions in Stemmer, 2001, 2003). Private behavioral events are a function of the environmental circumstances in which they occur. The full analysis of private behavioral events relates the behavior in question to those circumstances. To be sure, physiological events necessarily participate in every behavioral event, public or private, but as material causes, not efficient causes (Moore, 2008). However, even though peristalsis, action potentials in affector or effector systems, cortical activity, or even neural networks cast as parallel distributed processing systems are clearly worthy of investigation in their own right, they are not necessarily private behavioral events, at least as radical behaviorists conceive of them.

### **Talk about Private Events as Dispositional**

Still other talk about private events takes the grammatical and syntactical form of being about something private, but the talk is not literally about anything private. Rather, the talk is occasioned by a repertoire of publicly observable behavior, the probability of engaging in certain forms of behavior in that repertoire, and perhaps also certain properties of those forms. This talk is dispositional, to use a conventional term. For example, to say that certain individuals have great “enthusiasm” for playing bridge is to make a dispositional statement saying that the individuals play and talk about bridge often. For radical behaviorists, the frequency with which the individuals play and talk about bridge is

attributable to the contingencies they have experienced. Another example is “beliefs”:

Our belief that there is cheese in the icebox is a function of, or identical with, our tendency to go to the icebox when we are hungry for cheese, other things being equal. . . . Our belief in what someone tells us is similarly a function of, or identical with, our tendency to act upon the verbal stimulus he provides. If we have always been successful when responding with respect to his verbal behavior, our belief will be strong. (Skinner, 1957, pp. 159-160)

Therefore, dispositional statements are actually about effects, rather than causes.

Related to dispositional usage are several common phrases in everyday language. One example is “I think. . .,” as in “I think it is going to rain today.” The phrase is ordinarily a comment on the strength of a response, given some set of prevailing environmental conditions. The speaker is commenting that the cloud formations, wind conditions, and humidity have been highly correlated with rain in the past, although the correlation is something less than 1.0. The speaker is not commenting on some nonbehavioral, mental entity called a “thought” that is “had.” When the correlation is even lower, the speaker might state “I wonder if it is going to rain today.” Again, the speaker is not commenting as a result of some nonspecific mental process called “wondering.” When the correlation is even higher, the speaker might state, “I know it is going to rain today.” Here, the speaker’s statement is not caused by a mental state of “having knowledge,” which would need to be verified by some other measuring technique. In no case is any statement a result of private, mental processes or entities that supposedly cause behavior, verbal or otherwise.

Importantly, there is no other dimension than the behavioral dimension. Thus, to say that the individuals have a private entity called “enthusiasm” that is inside their skins in a subjective or mental dimension and that causes them to play and talk often about bridge is to go beyond a descriptive statement and reveal the influence of the social–cultural traditions of folk psychology. What has happened? The root term of enthusiasm presumably started out as either an adverb or adjective. In its adverbial form (“enthusiastically”), the word describes the manner in which someone plays bridge. In its adjectival form (“enthusiastic”), the word describes the characteristics of someone who plays bridge. The adverbial and adjectival forms are therefore occasioned by certain properties of responses making up a repertoire. The properties of responses in the repertoire are functionally related to the contingencies that cause the responses in question. Unfortunately, the adverbial or adjectival form is then converted to a noun. Through the influence of social–cultural tradition, which mandates looking inside individuals for the autonomous, initiating cause of their behavior, the noun is taken to refer to a causal private entity or state in another dimension that individuals possess. A verbal transformation sends psychologists off looking in another dimension for the causal entity to which the noun is said to refer, and the whole process counts as a causal explanation of the behavior in question. The greater part

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of traditional psychology rests on such a view, and radical behaviorism vigorously opposes it.

The topic of dispositions is central to much of the analysis of psychological positions carried out in philosophical psychology. According to philosophical psychology, behaviorism is a position that translates statements about private events into statements about dispositions. Dispositions are then defined in terms of their relation to observable behavior to be respectable or meaningful. The resulting position is often called “philosophical behaviorism.” On this view, to be in pain is to be disposed to engage in publicly observable, pain-related behavior. Embracing a cognitive orientation, Fodor (1968) criticizes behaviorism for rendering private events (note that Fodor calls them “mental predicates”) ultimately in behavioral terms:

To qualify as a behaviorist in the broad sense of that term that I shall employ, one need only believe that the following proposition expresses a necessary truth: For each mental predicate that can be employed in a psychological explanation, there must be at least one description of [publicly observable] behavior to which it bears a[n exhaustive] logical connection. I shall henceforth refer to this proposition as P. . . .A mentalist is, then, simply someone who denies “necessarily P”. . . .The distinction between mentalism and behaviorism is both exclusive and exhaustive. (pp. 51, 55)

Fodor’s reasoning is that dispositional talk by behaviorism fails to recognize the direct, causal relevance of private, internal states, which cognitive orientations argue is necessary. His reasoning further challenges what he takes as the underlying premise in philosophical behaviorism—namely, that first-person statements about being in pain are meaningful only if individuals have somehow reached a conclusion based on the observation of first, their own inner state, and second, their own subsequent actions. Fodor’s comments target such positions as the logical behaviorism of Carnap and Hempel (Kitchener, 1999), the conceptual analysis of Ryle (1949), and perhaps even Wittgenstein (1953/1973), although Wittgenstein preferred to talk of “natural expressions” of pain.

Ironically, the criticism does not apply to even neobehaviorism. The move in neobehaviorism of linguistically converting adjectives and adverbs to nouns ends up institutionalizing the appeal to inner causes from other dimensions and investing the terms with a meaning beyond any reference to observable behavior. Thus, Moore (2008) points out that neobehaviorism ends up being consistent with mental or cognitive orientations, instead of distinct from them as Fodor (1968) claimed. Although various forms of mediational neobehaviorism typically make such linguistic moves, radical behaviorism does not, as indicated by its view of private behavioral events. Therefore, radical behaviorism is clearly not equivalent to these other forms of behaviorism. It further follows that Fodor’s claim does not apply to radical behaviorism, since what counts as behavior in radical behaviorism is not restricted to a publicly observable event.

### **Talk about Private Events as Explanatory Fictions**

Finally, some talk about private events reflects the influence of factors of social-cultural origin that are cherished for irrelevant and extraneous reasons, perhaps as unwarranted metaphors from language patterns or fictional distortions. This sort of talk involves explanatory fictions. As described earlier, talk invoking dispositions as causes is a special instance of this sort. The source of talk involving explanatory fictions lies more in the social-cultural reinforcement for the traditions of “folk psychology” than in any factors in space and time that researchers can manipulate to affect behavior.

The hallmark of statements of this sort is the appeal to private phenomena from other dimensions as causally effective antecedents. The private phenomena are invested with just exactly the causal powers and forces necessary to explain the behavior in question. Representative terms used in conjunction with this conception of private causal phenomena are acts, states, mechanisms, processes, entities, and structures. Representative terms used in conjunction with the other dimensions are mental, cognitive, psychic, spiritual, subjective, hypothetical, and conceptual. To also be included are statements appealing to physiological structures as autonomous and initiating causally effective antecedents, or, alternatively, statements in which physiological structures are simply proxies for causal acts, states, mechanisms, processes, entities, or structures from other dimensions. Such statements may be traced at least as far back as the era of introspective psychology. For radical behaviorists, the whole approach may be designated as mentalism. Talk of such mentalistic explanatory fictions may be dismissed as ineffective when it comes to the prediction and control of behavior, except, of course, if one is interested in the social-cultural reinforcement that promotes such talk and induces individuals to accept the talk as explanatory.

Statements involving explanatory fictions are prominent in traditional psychology. The traditional view simply takes it for granted that private events take place in a dimension that differs from the one in which publicly observable behavior takes place. Private events are therefore held to be explicitly nonbehavioral. The traditional view further takes it for granted that an understanding of what these private events are, as well as an understanding of how they cause publicly observable behavior, are necessarily involved in an understanding of the human condition. Finally, the traditional view takes it for granted that any intellectual position that presumes to adequately comment in a causal way on the human condition must come to grips with private events, as it seeks to explain behavior.

An entire methodology has evolved to support this view, based on attempts to deal scientifically with private events. The position is called methodological behaviorism. Methodological behaviorism is the position that in psychological science, one can comment directly only on things that are publicly observable. Inasmuch as the mediating private events invoked by neobehaviorism (which are the outgrowth of the factors described earlier in this paper) are not publicly observable, methodological behaviorism sought to deal indirectly with those events

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as theoretical terms such as hypothetical constructs. As described at the beginning of this article, these private events then needed to be operationally defined. The public event served as the proxy for the private, giving “theoretical” license to the appeal to the private phenomena. Thus, the commitment to a conventional interpretation of operationism forged a link that virtually equated mediational S–O–R neobehaviorism and methodological behaviorism under the guise of “theory.”

To be certain, an approach restricted to publicly observable factors was thought to safeguard the scientific character of psychology as a science. However, history reveals that the particular way the restriction was implemented has been, and indeed continues to be, troublesome. Moore (2008) pointed out that this restriction has only preserved the old dualistic explanatory fictions unharmed—in some cases (e.g., S. S. Stevens) quite unselfconsciously—instead of banishing them. The number of contemporary psychologists who are seduced by professional contingencies into promoting mentalistic explanatory fictions as theory is regrettably large. Even more regrettable is that most don’t even recognize they are so seduced.

Radical behaviorists do not distinguish between observational and theoretical terms in their analyses of verbal behavior (Moore, 2008). As mentioned earlier in this paper, such a distinction is based on a referential, symbolic view of verbal behavior rather than a genuinely behavioral view. Accordingly, radical behaviorists do not render private events as theoretical terms such as hypothetical constructs from other dimensions, which then need to be operationally defined in terms of observables to be legitimate. Again, private events are real behavioral events, and they are either respondent or operant in character. They are no more hypothetical than salivation or lever presses are hypothetical. To be sure, radical behaviorists may not currently have access to private events of others, but maybe with improved technology the access will come about. The boundary between public and private is not fixed. In the meantime, although radical behaviorists may have to deal inferentially with the private events of others, an individual’s own private events are not an inference for the individual in question (Skinner, 1953).

In short, Moore (2008) has described the problems created by conceptions of private events as mentalistic explanatory fictions derived from folk psychology as follows:

1. They interfere with effective prediction and control of behavior.
2. They obscure important details.
3. They misrepresent the facts to be accounted for.
4. They impede the search for genuinely relevant variables.
5. They allay curiosity by getting people to accept the postulation of fanciful and fictitious entities as explanations.
6. They give false assurances about the state of our knowledge.
7. They lead to the continued use of scientific techniques that should be abandoned, such as the hypothetico-deductive method, because those techniques are wasteful and ultimately ineffective.

## Summary and Conclusions

For radical behaviorists, talk ostensibly about “private events” could be about any of four things. First, the talk could be about private behavioral events. This talk reflects the way that sensations and feelings, as well as covert operants, influence subsequent nonverbal and verbal behavior. These events may not be accessible to others. Nevertheless, they are critical to understanding behavior in all its complexity. An important matter is that this talk is concerned with behavioral phenomena in the one dimension.

Second, the talk could be about physiological events. Physiological events are also not ordinarily accessible to others. In addition, physiological events necessarily participate in every behavioral event, public or private. However, for radical behaviorists a physiological event is not the same type of event as a private behavioral event. More particularly, an organism’s physiology is a material cause. This sense of causation contrasts with that commonly seen in traditional psychology, which formulates physiological factors as autonomous or initiating causes of behavior.

Third, the talk could appear to be about private events, but it is not literally about anything private. Rather, the talk is actually about the probability of engaging in publicly observable behavior. This talk is said to be dispositional. Importantly, for radical behaviorists dispositional talk is about the effects of contingencies. This sense of dispositions contrasts with that of traditional psychology, which routinely formulates dispositions as initiating or mediating causes of behavior.

Fourth, the talk could be about explanatory fictions. In traditional psychology, this talk is assumed to identify causal events in other, nonbehavioral dimensions. Often the talk is justified as being “theoretical.” However, for radical behaviorism there are no other dimensions in the sense that traditional psychology envisions. Rather, this talk merely reflects the social–cultural traditions of folk psychology. According to radical behaviorism, this talk interferes with an effective understanding of behavior and may be dismissed as mentalism, notwithstanding its theoretical pretensions. Indeed, radical behaviorists regard Western culture as decidedly mentalistic, if not dualistic, largely because it embraces this traditional conception of the nature and causal status of private events. Because feelings and internal states occur at just the right time (i.e., prior to behavior), they are mistaken for causes. Even if theorists in traditional psychology relate them to actual events inside an individual—and they do not routinely do so, traditional theorists fail to assess the extent to which those events are, in turn, functionally related to environmental circumstances. The conception of “Autonomous Man,” already at great strength because of prevailing social–cultural traditions and folk psychology, holds that human behavior is initiated from within. Traditional approaches mischievously perpetuate this conception by casting explanatory fictions as private events in their theories.

Overall, the conception of private events as behavioral allows radical behaviorists to relate those events to operant contingencies at a descriptively



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consistent level without surrendering to mentalism and methodological behaviorism disguised in purportedly “theoretical” language. It remains the case that one can predict and control both public and private behavior on the basis of knowing one’s genetic endowment and the environmental circumstances of the past, as well as those circumstances with which an individual is currently in contact.

And that is why the radical behaviorist conception of private events is interesting, relevant, and important.

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