

## **OVERCOMING THE PSEUDO-PROBLEM OF PRIVATE EVENTS IN THE ANALYSIS OF BEHAVIOR**

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**ABSTRACT:** Radical behaviorism is distinguished from other varieties of behaviorism in part by its willingness to include private events among its subjects of analysis. This paper reviews the public–private dichotomy as described by Skinner, and concludes that this dichotomy is based upon faulty assumptions. An alternative conceptualization of events of the private class is proposed, whereby such events are viewed as neither private nor biological in nature. It is argued that while these events are complex and subtle, as interaction of responding and stimulating taking place in the same field of interaction as public events, they are accessible to external observers. The nature of their observation is described, and implications for behavior analysis as a scientific system are provided.

*Key words:* private events, interbehaviorism, observation, privacy

The sciences are investigative enterprises organized with the aim of ascertaining the nature of specific things, and by virtue of their aims in this regard they embody a combination of characteristics that are not found in human enterprises of other sorts. Specifically, the sciences are serious enterprises in the sense that their operations permit effective action to be taken with respect to the things investigated (Skinner, 1953), or as Kantor (1953) puts it, they afford an orientation toward those things. Secondly, the sciences involve a factor of novelty or discovery (Kantor, 1953; Skinner, 1953), the implication being that our action or orientation toward the things investigated becomes more effective or more elaborate as our investigations proceed. In this respect, scientific enterprises are cumulative and corrigible (Kantor, 1953).

Non-scientific enterprises lack one or the other or both of these characteristics (see Hayes & Fryling, 2009, for further discussion). For instance, the humanities, while serious, lack a factor of novelty. As Skinner (1974) points out in this regard, the ethical writings of Plato are still studied as though they shed light on contemporary human affairs while Aristotle’s scientific writings are of historical interest only. Likewise, the arts, while novel, lack the quality of seriousness. The primary aim of such enterprises is to induce emotional responding. While it is true that under some conditions some products of the arts may predispose some of their consumers to take effective actions of various kinds, secondary occurrences of this

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are not essential to such enterprises nor does their absence diminish the value of such products.

While scientific enterprises may be distinguished from the non-sciences by their embodiment of these two characteristics, they may be differentiated by the things isolated by each as the subject of their investigations. Each of the sciences operates upon a unique set of events, and the means by which their aims as scientific enterprises are pursued are determined to a large extent by the nature of the events upon which they are operating. In other words, the means by which scientific understandings accumulate and change are peculiar to specific subject matters (see Hayes & Fryling, 2009).

In some sciences, the primary means by which such understandings are achieved is by the discovery of previously unknown phenomena. Such is the case, for example, when newly developed instruments of observation reveal constituents of what were previously held to be indivisible entities. This is not the means by which scientific understandings accumulate when the objects of investigation are both readily available to unaided observation and ubiquitous, as is the case for the science of behavior. Rather, the primary means by which progress occurs in this science is by way of reconsideration as to the nature of its subject matter, the manner in which it is formulated, and the premises upon which its special study is undertaken (Kantor, 1953).

In need of reconsideration in the science of behavior is Skinner's (1953, 1957, 1969, 1974) bifurcation of the events isolated as its subject matter into public and private classes on the basis of which side of the responding organism's skin they are held to be taking place. This formulation disrupts the orderly accumulation and evolution of scientific understandings pertaining to events of the private class in particular, though also to those of the public class in which the former may be participating. More fundamentally, it threatens the validity of the science of behavior and its significance within the larger scientific domain.

Our aim in what follows is, first, to substantiate these claims. Toward this end, the logic by which Skinner bifurcated psychological events into public and private classes, and by which events of the private class were characterized, will be examined. We will conclude that the public-private dichotomy proposed by Skinner is based on contradictory premises and ill-conceived notions of practicality. Following this, we will offer an alternative to the manner in which events of the private class are formulated. We will argue that so-called private events are neither private nor biological in nature but are, instead, public psychological events of a complex and subtle variety. Finally, we will address the practical matter of their observation and investigation. We will suggest that events of exceeding subtlety are able to be observed provided that appropriate practices of observation are employed.

### **Systemic Problems with the Public-Private Dichotomy**

Skinner (1953, 1957, 1969, 1974) argued that a science of behavior could not afford to ignore the small part of the natural world that was enclosed within the

skin of the responding organism. Among the events comprising this part of the natural world were stimuli such as toothaches and dry throats (Skinner, 1953, pp. 257-258), covert responses of both verbal and non-verbal forms (Skinner, 1953, p. 282; 1974, p. 27), and events not readily classifiable as either stimuli or responses. Among the events held to be of unclear dimensions were feelings. According to Skinner (1969), feelings as responses were not readily distinguished from the stimulus things felt. This dichotomy of the public and private incorporated in behavior analytic theory presents problems for the interpretation of responses, stimuli, and the relations between them, to which we now turn.

### **Private Responses**

The notion that psychological responses are occurring within the skin of the responding organism undermines the distinction between the sciences of behavior and physiology as to the events isolated by each as their distinct subject matters. Skinner (1938, p. 6) argued that the subject matter of behavior science was the action of the *whole organism* in commerce with the outside world, not the actions of its parts considered separately. Skinner's (1953, 1969, 1957, 1974) concept of private events implies that actions of parts of the organism, located within the organism's skin, fall into the category of events legitimately studied by behavior scientists.

While Skinner's contentions concerning private response events contradict his prior assertion as to the proper subject matter of a science of behavior, his proposed dichotomy of the private and public does not imply a duality of mind and body. Private responses are not held to be made of any special sort of stuff by virtue of the location in which they are occurring. This is to say they are not regarded as "mental" events by Skinner. Rather, they are distinguished from public responses merely by their inaccessibility to external observers, a circumstance owing to the exceedingly low magnitudes in which responses of these sorts occur (Skinner, 1953, p. 282; 1957, p. 141; 1969, p. 242; 1974, p. 27).

This contention does not pertain to all instances of private responding, though. This is to say, cases are cited in which the magnitude of a response is not the reason for its inaccessibility to observers. In cases of rapid self-editing, for example, such events are regarded as sheer physiological happenings or, as Skinner puts it, events that have not yet reached their final forms as responses (Skinner, 1957, p. 371). This interpretation of private response events is particularly troublesome because the part within the skin presumed to engage in private responses of this sort is the brain. Admittedly, the brain is viewed by Skinner as a biological organ, not a location in which an invisible entity of non-natural dimensions resides. Still, at least in the case of rapid self-editing, private responses are not responses of the ordinary sort.

Nonetheless, apart from substituting a material organ for the immaterial mind as the hypothetical locus of such events, there is little to distinguish the behavioral perspective on this matter from the perspective of conventional dualists (see also Staddon, 1988). Substituting the more scientifically respectable brain for the mind

as the locus of private responses does not imply a difference in the logic by which this part is identified as the locus. The logic is the same.

The real problem here is that response events of the psychological type are not sensibly partitioned into those occurring within the skin and those occurring at the surface of the skin—not only because action at the surface of the skin is a peculiar notion, to say the least, but also because what occurs at some location within the skin is not the action of the whole organism. To be true to the premise of whole organism action, it must be agreed that remembering no more occurs within the skin of the head than walking occurs within the skin of the legs. Both are actions of the organism conceptualized as a whole, a conceptualization that makes the skin a boundary condition for the bifurcation of responses into public and private categories nonsensical.

### **Private Stimuli**

With respect to private stimulus events, Skinner (1953, p. 257) is careful to point out that, apart from the location in which they are occurring, such events are not assumed to play any special sort of causal role with respect to response events of either the public or private domain. This premise does not underlie all considerations of private stimulus events, however, constituting a second problem with this dichotomy. For example, while private stimulus events are held to be capable of eliciting responses and exerting discriminative control over operant behavior (Skinner, 1953, pp. 257-258), they are not held to operate as reinforcers. To assert reinforcement as a role for such events is problematic for obvious reasons. However, in denying this role, it must be admitted that private stimulus events are assumed to play a different role in the analysis of behavior than are their public counterparts.

### **The Relation between Stimuli and Responses**

To suggest that psychological events of any variety are taking place within the skin of the behaving organism is indicative of a lack of clarity as to the nature of the psychological datum. Two issues stand out in this regard, the first having to do with the form or manner in which psychological events are manifested in the biological sub-stratum; the second, pertaining to the compatibility of the premises upon which psychological events are held to be private, and those upon which they are conceptualized as acts of the whole organism.

With regard to the first of these issues, in order for a psychological event to occur within the skin of the responding organism, it must be an event of the sort that is capable of being factored in to the event matrix occupying this location. Given that the events comprising this matrix are interactions among the internal organs and other biological constituents of the responding organism, the participation of a psychological event in this matrix assumes that its form is suited to interactions of a wholly organismic sort. In other words, only when

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psychological events are conceptualized as wholly organismic phenomena can their occurrence within the skin of a responding organism be postulated.

However, even when the organismic component of a psychological event is properly identified as an act of the whole organism as opposed to its parts considered separately, an act of a whole organism is not, in itself, a psychological event. In short, a psychological event is not a wholly organismic phenomenon. Rather, a psychological event is a *relation* in which the responding of a whole organism is only an analytical part. Also entailed in such an event is the acting of some aspect of the environment. Taken together, a psychological event is a relation obtaining between the responding of a whole organism and the stimulating of an enviroing object or event (Kantor, 1958).

Moreover, the action of the whole organism is not usefully construed as the sum of the biological events and processes taking place in an instance of responding. The concept of action by the whole organism serves to distinguish the subject matter of psychological study from that of the biological domain. The value of this construction for the discipline of psychology is precisely its irreducibility to events of the biological domain.

Further, even if the value of the whole organism construction were overlooked in assuming this concept to represent the compilation of biological events entailed in an instance of responding, these same events could be enumerated without regard to the public–private distinction articulated by Skinner. In other words, when the action of the whole organism is misconstrued in this manner, the bifurcation of psychological events into public and private classes, with the organism’s skin being the relevant boundary condition, is superfluous.

To reiterate, when psychological events are usefully conceptualized as relations of responding by whole organisms with stimulating by enviroing things, a location inside the responding organism cannot be the place in which these relations are occurring. Instead, relations of responding and stimulating are taking place in fields of interaction in which biological organisms and enviroing objects are situated.

### **Practical Problems with the Public–Private Dichotomy**

In addition to the philosophical problems raised by the dichotomy of public and private events, this construction gives rise to problems of a practical sort. Specifically, it rules out the investigation of private events. To the extent that stimulus and response events occurring within the skin are, by definition, not able to be reliably detected, measured, or manipulated, they are excluded from consideration as objects of investigation. They remain, instead, events considered suitable for consideration only in the interpretive domain (e.g., Palmer et. al., 2004, p. 115).

This contention reveals a misunderstanding of interpretive operations in science. Interpretation is not an operation that occurs with respect to events that have not been identified. It is not a matter of free construction. On the contrary, it is an operation made with respect to the products of investigation in a scientific

enterprise in concert with its philosophical foundations. Misunderstanding as to the nature of interpretative operations in science has given rise to what is considered to be an important distinction between Radical and Methodological Behaviorism (Skinner, 1974). Radical behaviorists contend that to acknowledge the scientific legitimacy of private events, as they do, will eventuate in a more complete understanding of psychological events than to deny them this status, as is the view of their methodological counterparts. To suggest that a particular phenomenon is worthy of scientific consideration is not synonymous with giving it this consideration, though, and indeed, very little of the latter has actually occurred. For the most part, the literature on private events since Skinner's time amounts to a reiteration of Skinner's contentions concerning them, including the insurmountable problem of their inaccessibility to observers (e.g., Moore, 1984, 2001, 2003).

This circumstance may also be attributed to the sorts of questions asked of private events, namely the means by which we acquire verbal behavior with respect to them (Skinner, 1957, 1974) as opposed to speculations concerning the nature of such events as psychological occurrences in their own right. Questions of the former sort are irrelevant to the more complete understanding of psychological events envisioned in the admission of private events into the scientific domain. How we learn to talk about private events is a different issue than the nature of the events talked about.

Questions of the latter sort, at least as they might be addressed from a psychological standpoint, aren't even asked, much less answered, by radical behaviorists. Such questions are precluded by the reduction of private psychological occurrences to events of the physiological domain which, conveniently, fall under the purview of physiologists, both now and in the future. Accordingly to Skinner (1974), the physiologist of the future will tell us what is taking place when we feel, imagine, dream, and remember. More importantly, the physiologist of the future will tell us how the organism is changed by exposure to contingencies of reinforcement and why the changed organism then responds in changed ways (Skinner, 1971, 1974). In essence, the physiologist of the future will explain the process of reinforcement. Until then, it is argued, we must be content with what we *can* know about private events, namely that they are conditions of the biological organism.

Unfortunately, our problems will never be solved in this way. Feeling, imaging, dreaming, and remembering are not things that genes or cells or neurons do, and no quantity of discovery about the actions of such entities will ever add up to an understanding of *psychological* events of these sorts. On the contrary, the problem of privacy is our problem. We just don't know how to solve it and thereby have found it convenient to believe that eventually a solution for this problem will emerge from beyond the boundaries of our science; and until such time as this happens, our job is simply to wait. To this we may add the presumption that we can afford to wait because private events, at least private response events, are mere "collateral" activities, mere "by-products" of contingencies operating with respect to more important public events (Skinner, 1953).

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More than half a century has passed since Skinner's solution to the problem of private events was proposed, and inasmuch as the physiologist of the future has yet to speak, it seems reasonable to consider an alternative solution for this important problem.

### **A Reformulation of Events of the Private Class**

#### *Premises*

As we are proposing an alternative to the dichotomy of the public and private in our field, we are obligated to explain our reasons for doing so, and this explanation is best accomplished by exposing the premises upon which we are operating in this regard. Some of these assumptions have already been implicated in our previous comments. Still, greater clarity will be achieved if they are presented in explicit form. Further, we wish to acknowledge their source: They are drawn from the works of J. R. Kantor (1953, 1958). That said, our premises, at least those central to present issues, include the following:

*Psychological events consist of interdependent relations of responding and stimulating, occurring in a multi-factor field.* This is to say, a psychological event is, in every instance, an interaction between a responding organism and a stimulating environment: It is never a mere organismic occurrence. Neither is it independent of, nor isolated from, the multi-factor field or setting in which it is taking place.

*Psychological events constitute actions of whole organisms, not of their parts considered separately from the whole.* By this logic, actions by parts of an organism, considered separately from the whole, are not psychological actions. Such actions are, instead, aspects of the events isolated as the subject matter of another science, namely biology. Actions by entities located within the skin of the organism are, thereby, not psychological events. It is always the whole organism who participates in a psychological event, and the action of the whole organism is always complex.

*The events of psychology are not reducible to the events of biology.* Because psychological events are not constituted merely of organismic occurrences but also entail stimulating environments, it is argued that they cannot be reduced to the events of biology without losing their distinctive character as psychological events. The reductive procedure is thereby rendered illegitimate.

*Psychological events constitute unique occurrences.* A psychological event, as a specific interaction of a particular response of a particular individual with a particular stimulus in a particular setting, happens only once. Hence, no matter how similar two events may seem, we cannot consider them to be repetitions of the same event without abstracting the temporal factor from their occurrences. This is to say, they occur at different times, and the second event has a history involving the prior occurrence of the first event that the first event does not have.

*Psychological events are ontogenic.* Psychological responses originate in the lifetimes of particular individuals and evolve over the course of their interactions

with specific stimuli. The particular ways in which individuals and stimuli operate in given situations depend on the ways in which they have previously interacted under definite conditions. Psychological events are, in this way, historical and cumulative.

**Definition of a Psychological Event**

From these premises and their implications, we may characterize a psychological event as follows:

*A psychological event is an interdependent relation or function obtaining between the responding of a whole organism and the stimulating of some aspect of the environment, set in a field of many other factors. Each psychological event is a unique event by virtue of the particularities of its occurrence, though each is also the cumulative product of the historical participation of those particulars and is, thereby, always a complex phenomenon.*

**Unapparent Events**

Given this description of a psychological event, we may now consider the conditions under which psychological events present the sorts of observational problems that have given rise to the illogical dichotomy of the public and private in the field of behavior analysis. We may begin by assuming that any aspect of a psychological event may present an observational problem. That is to say, under some circumstances the problem may pertain to the response phase, under others to the stimulus phase, and sometimes to both of these phases at the same time.

Consider the following cases as illustrations of these circumstances.<sup>1</sup>

**RESPONSE PHASE**

	<b>Apparent</b>	<b>Unapparent</b>
<b>Apparent</b>	<i>Talk about current happenings</i>	<i>Think about current happenings</i>
<b>STIMULUS PHASE</b>		
<b>Unapparent</b>	<i>Talk about past happenings</i>	<i>Think about past happenings</i>

The case of talk about current happenings presents no problem of observation as both the response and stimulus phases of this event are immediately apparent to observers. With regard to unapparent responses such as thinking, however, it may not be obvious to an observer that a response has occurred. Likewise, when a

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<sup>1</sup> This example is taken from Hayes (1994).



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person speaks about something that is no longer present, it may not be obvious what stimulates such action. Finally, when a person thinks about something that is no longer present, it may be very difficult indeed for an observer to know that anything has happened.

To account for the difficulty posed by unapparent stimuli, as in the case of the past happenings in this illustration, we cannot suggest that the response occurs in the absence of a stimulus because this interpretation does not comport with our definition of a psychological event as a relation of responding with respect to stimulating. Instead, we must account for the action of a stimulus in a circumstance in which the stimulus as an object is not present.

Added to this, we must examine how the topographical characteristics of immediately present stimulus objects and the manner in which they operate or are introduced into event fields may impact the probability of their functions being actualized by observers.

Our definition of a psychological event also precludes the standard rationale for the observational difficulty posed by an unapparent response, such as thinking. We cannot attribute this difficulty to the location in which the response occurring because, in present perspective, all psychological events are assumed to be taking place in the same location, namely, in an event field. Instead, we must account for this difficulty by reference to the morphological features of unapparent responses, though in such a way that they are construed as something other than sheer biological activity, as the latter are not psychological events.

We will deal with each of these issues in turn.

### *Unapparent Stimuli*

The problem of unapparent stimuli is addressed by proposing a distinction between the source of stimulating action and the stimulating action itself, along the lines drawn between the organism and its action. In Kantor's (e.g., 1924, pp. 47-48, 1958) terms, the stimulus as object is distinguished from the stimulus as function.

This distinction is not fully systematized in behavior analysis, and for this reason the parallel structure of organismic and environmental concepts, as herein proposed, may seem unwarranted or unnecessary. The parallel structure is required by our definition of a psychological event, however. Recall that a psychological event was defined as an interdependent relation of responding and stimulating. In other words, a psychological event is a function, an *interaction*, and a unit of this sort cannot logically be comprised of action on one side and an inert object on the other (see Parrott, 1983, 1986 for further discussion).

That said, we suggest that a circumstance in which a person appears to act with respect to an absent stimulus is one in which the action or function of an absent stimulus object is operating through another stimulus object that is present. Stimulus functions operating from non-original sources are called substitute stimulus functions in this formulation (e.g., Kantor, 1924, 1977, 1982; Kantor & Smith, 1975).

A stimulus may acquire a substitute stimulus function in a number of ways. For example, formal similarities among stimuli may constitute a condition for the development of substitute stimulus functions, as observed in the phenomenon of stimulus generalization. Substitute stimulus functions may also be established under conditions of proximal occurrence of stimulus objects, either temporally or spatially. The case of temporal proximity is illustrated in the acquisition of the functions of an unconditioned stimulus by a conditioned stimulus in a respondent conditioning preparation. Spatial proximity as a relevant condition for the development of substitute functions is exemplified in Skinner's concept of the metonymical tact (1957, pp. 99-102), among other analyses. Hence, while the differentiation of stimulus as object and stimulus as function is not a categorical distinction in behavior analysis, it is nonetheless entailed in behavior analytic interpretations of a wide range of phenomena.

Returning to the problem of unapparent stimuli, when a person appears to act with respect to a stimulus that is absent from the situation (i.e., a past happening), we suggest that the stimulus function of this historical event is operating through another immediately present stimulus object, and that this circumstance is an outcome of some condition of formal similarity between the two stimuli or some circumstance of their proximal occurrence in the history of the actor. That is to say, the past event is present in the stimulating action of some present stimulus object (Hayes, 1992).

Also relevant to this discussion are circumstances in which the functions of immediately present stimulus objects are not actualized for observers due to some aspect of their object properties or the manner in which their presence in event fields comes about (Kantor, 1924). Generally speaking, the functions of stimuli inhering in objects of relatively greater magnitude (e.g., a loud noise), intensity (e.g., a strong odor), size (e.g., a tall building), or peculiarity (e.g., an unidentified flying object) are more likely to be actualized than those inhering in similar objects having lesser degrees of these properties. The actualization of stimulus functions may also be impacted by such conditions as the movement, repetition, or sudden appearance of stimulus objects.

Observer characteristics are relevant to these issues as well. Whether or not a particular function of a stimulus object is actualized for a given observer depends on the observer's history of interaction with stimulation arising from such objects. For example, a bird song is more likely to be heard by a professional bird watcher than by someone without this history. Likewise, immediate or pressing concerns of an observer may impact the likelihood that functions of stimuli irrelevant to those concerns will be actualized. To these characteristics we may add the organismic condition of observer. This is to say, the patterns of stimulus functions actualized for observers under conditions of fatigue, sickness, or intoxication are likely to differ from those obtaining when observers are rested, well, or sober.

*Unapparent Responses*

We turn now to the problem of unapparent responses. As previously discussed, a psychological event is constituted of both response and stimulus phases configured as a unitary phenomenon. Kantor (1958, 1977) suggests, however, that either of these phases may be conceptualized apart from the other for particular analytical purposes. With this provision, we may examine the response phase of a psychological event for the purpose of determining how it may be configured such as to serve or not serve as a stimulus for an observer.

Considered independently of stimulation for purposes of this analysis, a response is a configuration of organismic events. Reference to these events and their organization constitutes a description of the form of a response. Responses differ as to the types and prominences of different organismic systems comprising their forms, and these differences may impact observers differently. For example, response forms characterized by prominent participation of the muscular and skeletal systems may serve readily as stimulus objects for observers, while those involving a preponderance of glandular activity may not be so readily confronted. We suggest that responses of the latter sort are exceedingly subtle in their operations, and it is this subtlety that poses observational difficulties.

It should be noted that responding on the parts of observers is coordinated with stimulating not with stimulus objects, however. Hence, the present argument with respect to the confrontability of stimulus objects is intended to imply only that sources of stimulation having substantive structure may be home to more functions than insubstantial sources, due to the addition of functions based on formal properties in the former case and the opportunities these properties afford for substitution. That is, when the form of a person's behavior is such as to generate a readily confrontable stimulus as a source of stimulation for observing, the observer is more likely to observe the person's behavior than when this is not the case.

By way of summary at this point, we have argued that a psychological event is an interdependent relation of responding with respect to stimulating, occurring in an event field. In keeping with this definition, we have suggested that some such events are exceedingly subtle in their operations due to the participation of substitute stimulus functions, the prominence of particular types of reaction systems constituting response forms, or because both of these conditions are present in a given event. Further, we have suggested that observers' capacities to detect such events, that is to say, whether the functions of subtle events are actualized for observers, depends on the characteristics and operations of the object sources of these functions. Also relevant to the observation of subtle events are observers' histories of interaction with similar events, the ongoing activities of observers, and the organismic conditions of observers at the time of their occurrences. We have *not* suggested that psychological events in which these circumstances prevail are unobservable. On the contrary, it is our view that no psychological event, no matter how subtle, is unobservable in principle. We have not dealt with the means by which such events may be observed however, and it is to this issue that we now turn.

## Observing

The means by which exceedingly subtle psychological events may be directly observed are best addressed upon some preliminary consideration of observing as a scientific operation, and as a psychological event.

### *Observing Operations in Science*

Observing operations are the most fundamental of all scientific operations, in the sense that all other scientific operations depend upon them and proceed from them. Observing, either directly or indirectly, is the means by which events of all types are drawn into scientific consideration (Kantor, 1953). So critical is observing to science that its operations are highly regulated by this enterprise. That is to say, practices have arisen to protect observations from various sources of contamination, distortion, bias, as well as to prevent other sorts of errors from compromising the outcomes of these operations.

One outcome of this circumstance in science, as well as the reasons for it, is the widely held view among scientists that observing operations have a pristine character, in the sense that their outcomes have the quality of objectivity. That is to say, scientists are inclined to believe that what is observed is there to be observed and, likewise, that what is not observed is not there to be observed. Understood in this way, observation is the means by which we can know the world as it really is.

In our view, this belief demonstrates a lack of awareness as to the even more fundamental and pervasive philosophical foundations upon which observations are made (Hayes, 1993, 1997a, 1997b). By way of illustration, if the observer is operating upon a philosophical foundation of Radical Behaviorism, he or she will see behavior as occurring under the control of the environment. Another observer, operating upon a different foundation, will see, in the exact same set of events, behavior willed from within. There is no getting around this issue. Scientists do not operate unwittingly. Neither do they operate upon the crude, undifferentiated, pre-analytic world of nature. On the contrary, their operations show intentionality, in the sense that Skinner (1957) uses this term, and the world they approach is already organized into categorical concepts. Scientists approach the world already armed with preliminary definitions and premises, and they see in that world instances and examples of their constructions. In short, the pre-analytic world is not subject to scientific observation, and its character is thereby not revealed by such operations.

### *Observing as a Psychological Event*

What holds for scientific observation also holds for non-scientific instances of observing, with one difference: Non-scientific observation is not constrained by practices aimed at eliminating potential sources of uncontrolled variability or error. In other words, non-scientific or lay observation is riddled with the sorts of errors scientific enterprises historically have guarded against. In being unconventional in this sense, lay observation cannot be viewed as a group practice. Instead, it must be

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understood as an individual phenomenon—as a psychological event—and there is no reason to suppose that it differs in any significant way from psychological events in general.

This suggests that an observing event is an interdependent relation obtaining between the responding of a whole organism and the stimulating of some aspect of the environment, set in a field of many other factors. We may also suggest that while each such event is a unique event, each is also an historical accumulation of prior occurrences in which those particulars were participating factors. The significant implication of the cumulative aspect of observing events is that what a given individual sees on a particular occasion of observing is not what another individual in that circumstance may see. What an individual sees on some particular occasion of observing is not just what is there to be seen, but also what has been there to be seen on previous occasions, and because no two persons' histories are identical, neither are what each sees in a given circumstance identical. Our point here is simply that observing events, like all other psychological events, are not discrete, isolated events. Instead, they have an historical, continuous, and cumulative character (Hayes, 1992).

### **Observing Subtle Psychological Events**

We have argued that an instance of observing is more adequately conceptualized as an endpoint in an historical accumulation of such events than as a discrete, isolated occurrence. How this interpretation of observing bears on the observational problems associated with exceedingly subtle psychological events remains to be addressed. In doing so, we will consider, in turn, the subtleties produced by the operation of substitutional functions of stimuli, insubstantial response forms, and when both of these conditions are present in a given episode of psychological activity.

#### ***Observing Subtle Events Involving Substitute Stimulus Functions***

A substitute stimulus function is one that operates from a non-original source object (in the absence of the original source) as a result of a similarity between the original and non-original sources, or by virtue of these sources having appeared proximally with respect to one another in the behavioral history of a given individual. Inasmuch as past happenings are absent from current circumstances by definition, a person talking about past happenings exemplifies this circumstance. From the perspective of an observer, the source of stimulation for talk of this sort is not obvious, and this circumstance has given rise to a variety of vague, incomplete, or otherwise inadequate interpretations of such events. Skinner, for example, in attempting to explain a person's report of his/her past behavior, suggests that "a speaker simply speaks from a special perspective: he was necessarily there" (1974, p. 30). Others point to mysterious memorial processes operating from freely constructed internal entities. Replacing these interpretations, the present analysis appeals to the distinction between stimulus objects and

stimulus functions and proposes that functions originally inhering in one stimulus object may come to inhere in another object as a result of a previous encounter with those objects under specific conditions of association in the history of a given individual.

Accordingly, the problem for the observer in such cases is to locate the source of stimulation for talk about the past in the present environment. Detecting a similarity between immediately present objects and those constituting the original sources of stimulation for such talk is one means of doing so. Partial similarities of both morphological and operational sorts are relevant to this task. Detecting the presence of an object in the immediate environment that had been present in the historical circumstances about which such talk pertains is another.

While successful engagement in either of these tasks implies a shared history between the actor and the observer, the latter depends on this history in a way that the former does not. For example, a comment about a cat's past playful behavior under current conditions in which the cat is engaging in playful behavior is one thing; talking about a cat's past playful behavior under current conditions in which a cat is not engaging in playful behavior is another. In the former circumstance, the cat's current activity stimulates behavior on the part of the observer that is similar to the behavior of the speaker with respect to the past activity of the cat, therein revealing the probable source of stimulation for the speaker's current action. The stimulus object in which substitute stimulation for talk about the cat's behavior inheres in the latter circumstance is presumably some event that just happened to be ongoing when the cat was playing. In this case, to detect the source of stimulation for the speaker's remark about the cat in the current situation would depend on the observer having been present when the cat was playing. In other words, successful completion of this task would depend on the observer having shared this experience with the speaker. More generally put, to detect the sources of stimulation for another person's behavior, particularly non-original sources through which substitute stimulus functions are operating, depends on a shared history with that person, and the more extensive that history, the better one is able to perform this task. Repeated exposures to such circumstances, and processes of generalization among them, make this possible. In sum, by virtue of shared experiences, observers come to know what objects and events serve as sources of substitute stimulation for the actions of other people, as well as for themselves.

### ***Observing Subtle Events Involving Insubstantial Response Forms***

A shared history with another person is also needed to detect the occurrence of exceedingly subtle forms of responding by that person. As previously mentioned, the stimulus functions inhering in some forms of responding are more readily actualized for observers than those inhering in other forms. For example, responses involving significant participation of skeletal and muscular reactions systems are observed more readily than those in which glandular systems are dominant. However, responses of the latter sort presumably occur in conjunction with more obvious response forms on occasion, and a shared history in which joint

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occurrences of this sort have been observed affords opportunity for the observation of insubstantial responses in the absence of their more obvious accompaniments. Moreover, all responses, including those of insubstantial forms, are coordinated with stimulation inhering in particular things, some of which may be readily observed. Hence, to the extent that a relation of responding with respect to stimulation constitutes a psychological event, as herein proposed, observing the likely source of stimulation for an insubstantial response is tantamount to observing the response itself. For example, having observed a person rail against a competitor is his or her presence may make it possible for an observer to detect that person's feelings of anger or other forms of insubstantial responding at the mention of the competitor's name.

As was the case for detecting the sources of stimulation for another's behavior, detecting the occurrence of another person's insubstantial responses, either by virtue of their historical concurrences with more obvious forms of responding, or by way of their relations to more or less obvious sources of stimulation, depends on the observer having shared a history with that other person. And like the case of stimulation, the more extensive that history, the more readily are such responses able to be detected.

### ***Observing Subtle Events Involving Substitute Stimuli and Insubstantial Responses***

The more elaborate an individual's repertoire becomes, the more likely it is to include instances of responding with respect to substitute stimulation. In other words, a child's behavior is less likely to be coordinated with stimulation inhering in non-original sources than an adult's, and this circumstance is a natural outcome of the latter's more extensive history of interactions with the environment. Likewise, insubstantial forms of responding multiply over a person's history in accord with the consequences normally produced by more substantial forms. In other words, insubstantial forms of responding are not as subject to aversive or potentially aversive consequences as more substantial forms, whereby they proliferate by way of self-editing and other processes (Skinner, 1957). As a result, insubstantial forms of responding coordinated with substitute stimulation are especially prominent features of adult repertoires, and it is often with respect to events of these sorts that observers are called to task. Observing events of these sorts is more complicated than when only one of these features is entailed, but the means by which this task may be accomplished are exactly the same. Specifically, a shared history between an observer and a person engaging in subtle events is required for such event to be observed; and the more subtle the event, as when both substitute stimulation and insubstantial response forms are contributing factors, the more extensive that shared history may need to be. For example, knowing what another person is thinking, defined for present purposes as insubstantial responding with respect to substitute stimulation, is observed when couples married for many decades finish each other's sentences. This is not something an unfamiliar observer of either member of the couple would be able to do.

In summary, it is our contention that “observability” is not a property of the events observed, but rather a property of the observer. More specifically, whether something that is observable in principle is observed in practice depends on the history of the observer. To observe exceedingly subtle psychological events on the part of another person, a shared history of with that person is required of the observer. More to the point, it is our view that observing, like all other varieties of psychological events, is historical in character, and that a means of directly observing subtle psychological events—of even the most extreme varieties—is enabled by this appreciation.

### Summary

We have argued that the problem of privacy in the analysis of behavior is a pseudo-problem having its source in an illegitimate dichotomization of psychological events on the basis of which side of the organism’s skin they are held to be taking place (Skinner, 1953, 1957, 1974.) We have pointed out that this dichotomy violates the definition of a psychological event as an interaction of responding on the part of a whole organism with stimulating on the part of an enviroing thing or event.

One consequence of this violation has been to thwart progress toward an improved understanding of the events presumed to comprise the private class. The failure of behavior analysts to contribute to an understanding of such important human phenomena as thinking, imagining, remembering, and feeling may explain why behavior analysis is so completely overshadowed by other systems in the psychological domain, regardless of how inadequate the latter’s interpretations of such events may be.

Another consequence of the failure of behavior analysts to adhere to their own definition of a psychological event is felt in the sciences of biology. Calling upon physiologists to solve problems they can’t possibly solve, especially when they *try* to solve them with help of misguided behavior analysts, disrupts the proper pursuits of these scientists. Threatened by this circumstance is the significance of the enterprise of behavior analysis within the larger scientific domain, along with its capacity to interact effectively with other disciplines.

To avoid these consequences and to promote the future well-being of behavior science, we have offered an alternative interpretation of the events held to occupy the “private” class. We have argued that events of these sorts, while subtle in nature, are responses of whole organisms with respect to enviroing stimulation, occurring in the same fields of interaction as psychological events of all other varieties. In other words, we have argued that no psychological event is private in the sense articulated by Skinner (e.g., 1953).

We are not alone in this contention. For example, Rachlin (1988, 1995) agrees that all psychological events are observable in principle. In making this case, he argues that the concept of the operant should be expanded to include larger patterns of behavior whereby the more subtle preliminary phases of these units may be observed upon the completion of their more obvious phases. Skinner’s



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“private” events are therein conceptualized as components of public events extended over time. Nonetheless, Rachlin’s (1988, 1995) interpretation of subtle psychological events is not unlike Skinner’s interpretation of some varieties of private events, at least in a practical sense. For instance, Skinner (1957) provides an analysis of what he calls “knowing short of action,” wherein he argues that such knowing may be conceptualized as potential behavior, observed upon the eventual emission of some form of overt action. For example, a person’s knowing that a particular phone is out of order is observed when the person uses another phone. From our perspective, however, the so-called covert or private phases of such events are themselves held to be directly observable—provided that acts of observing are properly conceptualized as psychological events in their own right.

Upon examining the characteristics of what we have called subtle psychological events, we have suggested that their subtlety is largely a matter of two factors, namely the types of reaction systems figuring prominently in their response phases and the substitution character of the stimulation with which they are coordinated. We have argued that subtle events involving these factors, though not readily observable in practice, are directly observable in principle. To make our case in this regard, we addressed the nature of observing as a psychological event. We pointed out that psychological events, including observing, are cumulative in nature, showing continuous evolution over the course of an individual’s history of interactions with environing things and events. This analysis suggested that observing subtle psychological events on the part of another person required a shared history between that person and the observer. It followed that the more extensive that history, the better able would the observer be to detect the occurrence of such events.

While we defend the notion that even exceedingly subtle events are directly observable provided that the task of observing is conceptualized in the manner described herein, we caution that our expectations as to what might be discovered about subtle psychological events should not exceed what behavior analysts have been able to achieve with respect more readily observed events. As scientific operations, prediction and control apply to classes of events, not to individual members of those classes. In other words, it has never been the aim of behavior analysts, nor have they ever been successful at predicting or controlling a particular rat’s pressing the left side of the bar with its right paw while its head is elevated and directed toward the food hopper. On the contrary, behavior analysts have predicted, controlled, or otherwise understood *classes* of psychological events. As such, we should no more expect to know exactly what a person is thinking, in all of its unique topographic and dynamic detail, than we have observed or know of an individual animal’s specific bar press.

In closing we suggest that the value of acknowledging the historical character of observing as a psychological event is the impetus this acknowledgement may give to the formulation of observing as a scientific operation.

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