

The Psyche as Behavior*

La Psique como Comportamiento

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ARTURO CLAVIJO A.

Universidad Nacional de Colombia, Bogotá, Colombia

Universidade de São Paulo, São Paulo, Brasil

Abstract

Behaviorism has argued that behavior is the Psyche and the subject matter of psychology. Although, some scientists had done empirical work with objective methods before 1913, the year in which John B. Watson published his manifesto, he was the first one to attempt a systematization of behavior as the Psyche, that is, as psychology's subject matter. In this text, I outline Watson's notion of behavior to compare it with two other forms of behaviorism: Skinner's radical behaviorism and molar behaviorism. The purpose of the paper is to illustrate how the concept of behavior has been and is changing.

Keywords: behaviorism, John B. Watson, behavior, psyche.

Resumen

Según el conductismo, el comportamiento constituye la Psique y el tema de estudio de la psicología. Aunque algunos científicos habían realizado trabajos empíricos con métodos objetivos antes de 1913, año en el que John B. Watson publicó su manifiesto, este último fue el primero en intentar la sistematización de la conducta como equivalente a la Psique, esto es, como el objeto de estudio de la psicología. El artículo discute la noción de comportamiento de Watson y la compara con otras dos formas de conductismo: el conductismo radical de Skinner y el conductismo molar, con el fin de ilustrar la forma en que el concepto de comportamiento ha cambiado y sigue cambiando.

Palabras clave: conductismo, John B. Watson, comportamiento, psique.

Resumo

Segundo o condutismo, o comportamento constitui a Psique e o tema de estudo da psicologia. Embora alguns científicos tivessem realizado trabalhos empíricos com métodos objetivos antes de 1913, ano em que John B. Watson publicou seu manifesto, este último foi o primeiro em tentar a sistematização da conduta como equivalente à Psique, isto é, como objeto de estudo da psicologia. Neste artigo, discute-se a noção de comportamento de Watson ao compará-la com outras duas formas de condutismo: o condutismo radical de Skinner e o condutismo molar, com o objetivo de ilustrar a forma na qual o conceito de comportamento mudou e continua mudando.

Palavras-chave: condutismo, John B. Watson, comportamento, Psique.

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Correspondence concerning this article should be addressed to Arturo Clavijo, e-mail: aaclavijoa@gmail.com. Department of Psychology, Universidad Nacional de Colombia, Cr. 30 No. 45-03, Building 212, Bogotá, Colombia.

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The Psyche as Behavior: From Watson to Modern Behaviorism

There is no need for controversy about what psychologists study. As the word implies, they study the Psyche. However, there is room for controversy about what the Psyche is. For instance, some dictionaries, introductory texts, and the American Psychological Association (2013) define psychology as the “science of mind and behavior” (see for instance, the Merriam-Webster Dictionary, 2013), which implies that the Psyche is composed of both, mind and behavior. Nevertheless, given that some authors define psychology as the study of mind (Gardner, 1987; Rivière, 1998) whereas others define it as the study of behavior (Baum, 1994; Skinner, 1938, 1953; Watson, 1913, 1930), and that those definitions are incompatible, to say that psychology is the science of mind *or* behavior would be more appropriate. Of course, many other entities, from the subconscious *mind* to social representations, seem suitable candidates for the Psyche, but most of them are just expressions of mind or behavior.

Behaviorism is the movement that has argued for behavior as the Psyche, or subject matter of psychology. According to the Merriam-Webster Dictionary (2013), behaviorism is “a school of psychology that takes the objective evidence of behavior (as measured responses to stimuli) as the only concern of its research and the only basis of its theory without reference to conscious experience”, and according to the Encyclopedia Britannica (2013):

Behaviorism was a highly influential academic school of psychology that dominated psychological theory between the two world wars. Classical behaviorism, prevalent in the first third of the 20th century, was concerned exclusively with measurable and observable data and excluded ideas, emotions, and the consideration of inner mental experience and activity in general (para. 1).

Later, the Encyclopedia Britannica added, A derivative form of classical behaviorism known as neobehaviorism evolved from 1930 through the late 1940s. In this approach, psychologists attempted to translate the general methodology prescribed by Watson into a detailed, experimentally based theory of adaptive behavior. This era was dominated by learning theorists Clark L. Hull and B.F. Skinner; Skinner’s thought was the direct descendant of Watson’s intellectual heritage and became dominant in the field after the mid-1950s. Other important behaviorists included Hull-influenced Kenneth W. Spence; Neal Miller... Edward C. Tolman; and Edwin R. Guthrie (para. 2).

Watson (1913, 1930), successful or not in his endeavor, was the first to openly argue for a psychology in which behavior was the Psyche. Actually, Watson (1913, 1930) was not the founder of behaviorism. As Wozniak (1997) argued, by 1913, when Watson delivered his “manifesto”, behaviorism was 40 years old. However, his influence in popularizing and making a case for behaviorism is undeniable. As his manifesto is a historical reference, I will use it as a departure point to examine how the notion of behavior has been changing since Watson introduced his behaviorism. It is important to review Watson’s ideas because later authors distorted or misinterpreted them, which also entails a distortion of behaviorism in general. For instance, contrary to what the Encyclopedia Britannica (2013) asserts in the quote above, ideas and emotions were key aspects in Watson’s behaviorisms. Next, I will outline some of Watson’s ideas and later compare them to those of two other versions of behaviorism: Skinner’s behaviorism and molar behaviorism. I must stress that my intention is just to illustrate how the notion of behavior has been changing. There are many others forms of behaviorism (see O’Donohue & Kitchener, 1999), and molar behaviorism is not necessarily

going to replace the traditional forms of radical behaviorism. It is also worth noting that this essay is intended for general psychologists rather than for behavior analysts and people well-informed on behaviorism.

Behavior in Watson's Behaviorism

As Wozniak (1997) pointed out, by the time Watson (1913) published his manifesto, several researchers, such as Douglas Alexander Spalding and Charles Darwin, had conducted studies with human and nonhuman animals employing objective methods. Nevertheless, nobody had systematized a psychology in which behavior was the subject matter, so Watson's purpose, according to Wozniak (1997), was to supply a rationale to legitimate the behavioral methods already in use and to justify them as an alternative to the study of consciousness by the introspective methods in vogue in his time. A key issue in Watson's systematization was his notion of behavior, which he defined broadly as "what the organism does or says" (Watson, 1930, p. 6). Because the definition is very general, it does not shed much light on what he understood by behavior. However, that understanding emerges from a closer look at some of his texts. Watson (1913) wrote,

Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior. Introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness. The behaviorist, in his efforts to get a unitary scheme of animal response, recognizes no dividing line between man and brute. The behavior of man, with all of its refinement and complexity, forms only a part of the behaviorist's total scheme of investigation (p. 158).

Defining psychology as an "objective experimental branch of natural science" implies that it

does not study an extra-natural thing and that those who study it must use the same methods and logic of the other natural sciences. Hence, in Watson's view, the Psyche, or subject matter of psychology, was a natural phenomenon. William James had argued more than a decade before that psychology was a natural science (Leahey, 1980). Nevertheless, in James' view, psychology's subject matter was consciousness, and Watson believed that any conception of consciousness, including that of James, was "neither a definable nor a usable concept" (Watson, 1930, p. 3). Watson's behaviorism had strong roots in Darwinism and functionalism, so his version of the Psyche was not exclusive to humans. Since he assumed continuity among species, he believed that research with other animals would help in the understanding of the human Psyche, just as research with humans would help in the understanding of the other animals' Psyche. His interest in animal behavior was one of the reasons for rejecting "mental states" and "consciousness" as the subject matter of psychology; it would not be possible to "introspect" the mental states of an animal.

According to Watson (1913, 1930), an observer could measure the behavior of another organism in physical terms, find the variables that regulate its behavior in the environment, and describe its behavior in a stimulus-response framework. In his view, the behavior of an organism was a physical phenomenon that consisted of responses to the different forms of stimulation in its environment. He defined a response as an observable and measurable movement that always involved the whole organism; however, the response could be so slight that an observer would require instruments to record it (Watson, 1930). For instance, a sub-vocal movement would be so small that only instruments could detect it, but it would involve the whole organism anyway. Each possible stimulus-response (S-R) relation was a unit, so that a stimulus could never be dissociated from its response,

and a response could never be dissociated from the stimulus that caused it. The psychologist's task was to identify the stimulus controlling each response.

Watson (1930) assumed contiguity and immediate efficient causation in each S-R relation so that every response was an immediate reaction to a present, effective stimulus. The way in which he dealt with apparently delayed responses shows his strong commitment to a strict S-R psychology. According to Watson, a response that seems to occur a long time after a stimulus just results from the accumulation of sequential S-R units that altogether conformed a habit. For instance, in a situation in which two people interchange the following verbal stimuli:

First person: "Meet me at the Belmont tomorrow for lunch at one o'clock".

Second person: "All right, I will be there."

If the second person arrives on time, Watson would have argued that it was because of the second person's reapplication of sub-vocal stimuli to movement in virtue of verbal habits (Watson, 1930). The person would keep telling himself, "I must go to my appointment at the Belmont." An important implication of Watson's S-R view is that the organism's behavior was not a continuous variable; in his view, the behavior of an organism was composed of discrete S-R units.

In relation to access by an observer, he believed that responses could be over-explicit or internal-implicit. Picking up a ball, writing a letter, driving an automobile, or flirting with a woman exemplified explicit responses which any observer could measure without instruments. The stomach contractions of a hungry person, glandular and small muscular movements produced by threatening stimuli, or salivation caused by certain food items exemplified implicit responses, which an observer could measure only with instruments. Both explicit and implicit responses could be produced by external or internal stimuli. Punching someone else as a response to an insult would be an external response to an

external stimulus. Calling a doctor as a response to the pain produced by an internal lesion would be an external response to an internal stimulus. Invisible movements in the muscle of a hand as a response to an insult would be an internal response to an external stimulus. Grinding the teeth as a response to an internal lesion would be an internal response to an internal stimulus.

In relation to learning, Watson believed that responses to stimuli could be innate or learned, although he gave more importance to the environment as a determinant of behavior. He supposed that organisms have a set of unlearned, reflex responses to few stimuli. The size and characteristics of the innate-response set would depend on the species. For example, humans would have fewer innate and more conditioned responses than insects. The learning of fear responses to new stimuli was a frequent subject in Watson's texts. According to him, only few stimuli would produce innate fear responses in babies. A loud sound was one of them. By presenting a neutral stimulus, like a rabbit, along with a loud sound, the rabbit would become a conditioned stimulus for the fear response, Watson (1930) explained the acquisition of new responses with Pavlov's theory of conditioned reflexes. As a matter of fact, Watson and Rayner (1920) performed the famous Albert experiment in which they created a conditioned response of fear to a rabbit in a child.

According to Watson (1913, 1930), all behavior, even feelings and thinking, is just a set of learned habits. As Verdu-Rico and Bentes de Carvalho-Neto (2010) pointed out, scholars may have overlooked and misrepresented Watson's theories on thinking and language. The Encyclopedia Britannica (2013) quote above is an example. Bergmann (1956) criticized Watson's behaviorism on several grounds, and one of them was his alleged rejection of a mind or mental events. Did Watson deny the existence of a mind? Yes, he did. Did Watson deny the existence of mental events? As mental, he did.

However, he did not deny the existence of psychological events such as thinking or feeling and their importance for a natural science of behavior. Did he deny subjective experience? He did not specifically deny it; he rather implicitly accepted its existence because if there is an objective experience, necessarily there is also a subjective one. He simply did not think that the immediate subjective experience had a role in a science of behavior.

Behavior in Skinner's Radical Behaviorism

Now, I will compare the behaviorism of Watson with that of Skinner. I must note that it is more difficult to portray in a few words the ideas of Skinner than those of Watson, which in itself shows conceptual progress, so I will contrast the views of Watson with an extremely simplified version of those of Skinner. The behaviorism of Skinner (1938, 1953) was similar to the one that Watson proposed in relation to the role of behavior in a natural science: both of them argued for behavior as the subject matter of psychology and the environment as the place to look for the causes of behavior. Nevertheless, there are more differences than similarities between them. As the words stimulus and response are frequent in the books and papers that Skinner wrote, a person who does not read them carefully may conclude erroneously that there were no major differences between him and Watson, and that Skinner was a typical S-R psychologist. The truth is that there are many differences. The most significant differences are that Skinner was not an S-R psychologist and that he believed that a science of behavior must explain subjective experience.

In Watson's (1913, 1930) view, each stimulus produced a response, so the environment acted on organisms. Organisms reacted by responding all the time to some stimulus. Each response would be a discrete event, but behavior seemed continuous due to the amount of stimuli that

incessantly assailed organisms. Like Watson, Skinner assumed that discrete and observable responses compose the behavior of an organism. Skinner (1938, 1974) acknowledged that Watson's S-R psychology accounted for a small portion of behavior, but not for the largest and more significant part. According to Skinner, the responses of organisms could be voluntary-emitted or involuntary-elicited. Classically conditioned and reflex responses exemplified elicited behavior. As emitted or voluntary behavior composed most of mammals' behavior, Skinner deemed insufficient an S-R framework in which behaving is just reacting.

Skinner adopted an R-S framework. He argued that the stimulus that modifies an emitted response is the one that follows it rather than the one that antecedes it. For instance, if by pressing a lever (R) in a Skinner box, a rat obtains pellets (S), it is more likely that the rat will press the lever again. As long as lever-pressing results in pellets, the rat will keep pressing it. If the rat does not receive any more pellets by pressing the lever, lever pressing will decrease or disappear. It is evident that no antecedent stimulus evokes a lever-pressing response. An S-R psychology assumed that the stimulus is an efficient cause that evokes, elicits, or produces a response. According to Skinner, the stimulus selects responses by making more likely those that produce reinforcing consequences and less likely those that produce punishing or no consequence at all. Skinner himself described his causal model as selection by consequences in an analogy with Darwin's explanation of evolution (Skinner, 1984).

Although Skinner emphasized the role of the consequence, he acknowledged that antecedent stimuli played a role. His framework incorporated three terms: an antecedent stimulus (Sd), a response (R), and a reinforcing or punishing stimulus (Sr). The position of the antecedent stimulus in his Sd-R-Sr scheme may mislead a lay reader because it looks like the

stimulus in the traditional S-R schema. According to Skinner, however, the antecedent stimulus sets the occasion for a response to occur instead of evoking it as a stimulus in a reflex does. If the rat in the Skinner box obtains pellets by pressing the lever only when a green light is on, eventually the rat will respond only in the presence of the green light and hardly ever or never in its absence, in which case, researchers say that the green light has gained control of the lever pressing. When there is no defined Sd, the box, lever, or other conditions present during the process become the antecedent stimulus.

Skinner (1938, 1953, 1974) called the relationship among the three elements of his framework a three-terms contingency. For instance, the contingency for the rat in the Skinner box establishes that, in the presence of the green light (Sd), lever-pressing responses (R) produce (R) food pellets (sr). Like Watson, Skinner assumed that the relation between stimuli and responses was contiguous in time; for a consequence to modify a response, it has to be close in time to the response. Other factors affecting the effectiveness of a contingency included food deprivation, biological conditions, and previous history. For instance, the rate of lever pressing is higher after longer deprivation periods for healthier than for unhealthier rats, and after previous reinforcing experiences by pressing the lever.

The notion of contingency, as a relation between environment and organism, was central to Skinnerian psychology. In a Skinner box, a researcher usually studies one or few contingencies, but other uncontrolled contingencies exist. If there is a response, some contingency should be controlling it. If, for example, water is available *ad libitum*, the rat will have to go to the water dispenser to drink it, so one can say that the water reinforces the rat's displacement to the dispenser. In the lab, researchers arrange the contingencies. Outside the lab, nature and society arrange them. In Watson's view, the role of a behavioral scientist is to identify the stimuli

that control each response. In contrast, according to Skinner and contemporary behavior analysts, the role of a behavioral scientist is to identify the contingencies that regulate or control a response.

Arguing that stimuli select responses, like Skinner did, implies that organisms respond or act continuously. According to Watson, stimuli initiated the movements that he called responses. In contrast, according to Skinner, the value of what an organism does depends on the contingencies operating in that moment. Hence, for Skinner, stimuli did not cause responses; they changed responding tendencies. The notion of reinforcement as selection by consequences that Skinner adopted may appear insufficient to explain all the complexity of human behavior, but that is precisely the point: Darwin explained the complexity of evolution with just the concepts of variation and selection. On the other hand, to account for human behavior, Skinner used other concepts besides reinforcement, which I left out of the present outline and include rule-governed behavior (Skinner, 1966), his approach to the study of verbal behavior (Skinner, 1957), his ideas on education (Skinner, 1958, 1961), and cultural change and planning (Skinner, 1999), among others.

Just as the notion of stimulus and its role in the explanation of behavior differ a lot in Skinner and Watson, the way in which they dealt with the idea of a subjective experience also differs. I emphasize that the difference was more in the way of dealing with subjective experiences than in accepting private events such as feelings in a science of behavior. Contrary to what the urban myth says, Watson and Skinner thought that what in vernacular language people call feelings, emotions, and thinking were behavioral phenomena that a science of behavior must explain. For instance, Watson devoted two chapters of his book *Behaviorism* to emotions and another two chapters to thinking (Watson, 1930), and Skinner discussed the subject in numerous papers

and books (see, for instance, Skinner, 1953, 1984). Skinner dealt with the so-called emotional life better than Watson, but this was because his approach was better in general, and not because Watson denied the existence of feelings and emotions whereas Skinner acknowledged them.

Accepting that there is a subject that knows and an object that can be known implies that human experience can be objective or subjective. In the first case, everybody can share the experience because it is public and overt for everybody to see. For example, the tree that a forgotten castaway is seeing on his island at this moment is a private experience as long as nobody else sees it, but the tree can be the object of a shared experience because other persons can see it in principle. In contrast, although others can observe the inflamed tooth of a rescued castaway, nobody would ever experience the pain that the inflammation causes. The experience of pain would be a private subjective event accessible only to the person experiencing it.

Both Skinner and Watson accepted the objective-subjective dualism according to which there are subjective-private and objective-public experiences, but Skinner, in contrast to Watson, held that a science of behavior should deal not only with objective but also with subjective experiences. As Moore (1995) pointed out, the objective-subjective dualism does not entail ontological dualism. Skinner (1945, 1989) argued that the difference between private and public stimuli and responses lies in their accessibility and not in their nature. As Skinner (1945) put it:

The individual's response to an inflamed tooth, for example, is unlike the response which anyone else can make to that particular tooth, since no one else can make the same kind of contact with it... With respect to each individual, in other words, a small part of the universe is private (p. 257).

There is debate about private events as Skinner conceived them in a science of behavior

(see for instance, Baum, 2011; Hocutt, 2009; Palmer, 2009; Rachlin, 2003, 2011). In a paper about privacy according to Skinner, Creel (1980) distinguished between potentially accessible and forever inaccessible or subjective private events. A researcher with the proper instruments could observe a potentially accessible event, but nobody would observe a subjective private event. Though the technology for observing sounds and images inside a person's head belongs, for the time being, to the realm of science fiction, it is a plausible technology. Those sounds and images exemplify potentially accessible events. Pain, pleasure, joy, and sadness exemplify subjective private events because nobody will ever experience others' pains or pleasures. According to Creel (1980), the notion of privacy for Skinner covered potentially accessible as well as subjective private events (see also Tourinho, 2009).

Most behavior analysts today accept Skinner's stance on privacy. Virtually all of them accept the existence of potentially accessible private events, but some are not as willing to accept the existence of subjective private events. For instance, Palmer (2011) said, "privacy is a circumstantial property of behavior, and we can dismiss privacy in principle for our considerations" (p. 203). By privacy in principle Palmer meant "events that must forever remain hidden... whatever the tools of the scientist" (p. 203), which implies that he would not accept in a science of behavior what Creel called subjective events, which will remain forever private. Moore (1995, 2001), on the contrary, argued that accepting subjective private events in a science of behavior is precisely a fundamental characteristic of the radical behaviorism that Skinner advocated. It is worth noting that Watson's implicit stimuli and responses are equivalent to Creel's potential accessible private events.

In synthesis, Skinner shared Watson's core argument about psychology as a science of behavior. Both argued for behavior as the subject matter of psychology, rejected mental

explanations, and adopted an environmental determinism. Neither Skinner nor Watson denied the importance of the organism, and both argued for historical factors in explaining behavior by relying on learning to explain new responses. Watson denied a place for consciousness and immediate subjective experience in a science of behavior, while Skinner argued that a complete science of behavior should deal with subjective experience. Although Skinner moved away from an S-R psychology, his commitment to a molecular analysis might have preserved something of the S-R logic in his conception of behavior.

Behavior in Molar Behaviorism

As I did with Watson's and Skinner's behaviorism, I will now offer a very simplified version of what some authors call molar behaviorism (see Baum, 2002; 2011). Molar behaviorists argue that activities or extended temporal patterns of behavior compose the Psyche. In general, molar behaviorism shares the basics with Skinner, and claims to follow him (see for instance, Baum, 2002; Rachlin, 1992). Like Watson and Skinner, molar behaviorists argue for behavior as the proper subject matter of psychology and the environment as the place to look for the relevant independent variables. Like Skinner, they assume that psychology studies organism-environment transactions that occur under a process analogous to Darwin's natural selection. Nevertheless, they differ in the scope of the analysis. The concern of Skinner was the equivalent to the molecule: the Sd-R-Sr unit. In contrast, molar behaviorists' concern is aggregated and extended patterns of behavior (Baum, 2002). One could say that, although Skinner cared for the forest and trees, his emphasis was on the trees. Molar behaviorists also care for the forest and trees, but their emphasis is on the forest.

To illustrate what patterns and activities are for molar behaviorists, I will examine three situations in the Skinner box. In situation 1, food and water are freely available. Under these

conditions, the rat spends its 24 hours eating, drinking, exploring, grooming, and sleeping; the rat allocates its time among the things that it can do inside the box, and its allocation of time is its pattern of behavior. The entire amount of eating, drinking, or exploring, is a pattern. Eventually, the rat presses the lever, but that lever pressing belongs to the exploratory pattern. Lever pressing in these circumstances is low. In situation 2, the rat obtains pellets by pressing the lever. Now, it allocates more time to lever pressing and less to other activities, and if the number of lever presses required for obtaining a pellet increases, the rat allocates even more time to lever pressing and less to other activities.

In situation 3, the rat can obtain pellets by pressing any of two levers. Under these conditions, the time that the rat allocates to the original lever will depend not only on the pellets that it obtains with that lever but also on the pellets that it obtains with the other. Modifying the contingency for one lever changes the amount of time that the rat spends on the other. If both levers require a fixed number of responses to deliver a pellet, the rat presses only the lever with the lowest ratio. If both levers deliver pellets after unpredictable time intervals, the rat presses both levers, distributing them in accordance to the amount of pellets that each lever delivers —what Herrnstein (1961, 1970) called the matching law because the responding rate tends to match the reinforcement rate.

Whereas for Watson behavior was a phenomenon composed of discrete responses, for molar behaviorists, behavior is a continuous phenomenon. Time is the only dimension common to all the activities that human and nonhuman animals can do, so duration is a measurement that allows comparisons of different activities such as eating and grooming or drinking and sleeping. Whereas, for instance, it is appropriate to compare lever-pressing response rate in one lever to response rate in the other, it would be inappropriate to compare the

response rate of grooming to the response rate of lever pressing because the activities have very different topographies. In the case of human activities, comparing the response rate of listening to classical music to that of jogging in the park does not make much sense, but comparing the time spent listening to music to that spent jogging makes sense. Hence, molar behaviorists record the time that human and nonhuman animals spend on those activities that their environment allows them to carry out in order to estimate time allocation, which is a continuous variable (see Baum, 2002).

According to Watson, to understand the meaning or function of a response, a psychologist must identify the controlling stimulus, and according to Skinner, the controlling consequences. In contrast, molar behaviorists argue that to understand the meaning or function of an instance of behavior, a psychologist must put the response in the context of the larger pattern of which it is a part. In situation 1 above, lever pressing was part of exploratory behavior whereas in situations 2 and 3 it was part of feeding behavior. As the three situations illustrated, changes in behavior resulted from changes in the environment. In situation 1, the rat acted without restrictions and distributed its time freely among the available activities. In situation 2, feeding was not free any more. It became conditional, or contingent, on lever pressing so that the rat increased lever-pressing time and decreased other activities' time. In situation 3, changes in one of the contingencies affect the other contingency.

A molar analysis has implications for the role of private events, subjectivity, and the psychological phenomena associated with them in a science of behavior. Molar behaviorists have argued against the use of internal events and have rejected subjective private events openly (see for instance, Baum, 2011; Rachlin, 2003). As Baum (2011) put it, "private events are irrelevant to understanding the function of behavior, that

is, activities in relation to environmental events" (p. 186). There are at least two reasons for which authors, like Watson, have appealed to internal stimuli and responses. First, to account for situations in which there is no close temporal connection between the stimulus and the response. In Watson's example of two people setting an appointment, he resorted to internal sub-vocal verbal stimuli to fill the gap between the present verbal stimulus and the next day's meeting. If there seems to be no external stimuli producing a response, internal stimuli may do the task. Nonetheless, internal or private stimuli and responses are by the time being inferences.

Second, internal events account for subjective phenomena like feelings and thinking. From a molar perspective, even accepting the existence of Creel's (1980) subjective private events, the phenomena relevant for a science of behavior are always publicly observable because patterns are observable in principle. A depressed person, for instance, might eventually have suicidal thoughts inaccessible to other people, but the depressive pattern is clearly accessible. The suicidal thought is an episode equivalent to a tree in the forest or to an isolated pressing of the lever in the Skinner box. By observing a single instance of lever pressing, a researcher would not be able to tell if the rat is responding to a schedule or exploring, even if a pellet follows the response. If the technology to hear what people say when talking to themselves were available, and the observed person says "I will kill myself", one cannot conclude anything because the fragment could be part of a joke, a memory of a text, a suicidal statement, and so on. To reach a conclusion, observing the pattern is necessary.

In synthesis, molar behaviorists believe, along with Watson and Skinner, that behavior is the Psyche, that the environment determines behavior, and that mentalism does not account for behavior. Like Skinner, molar behaviorists think that the environment acts on the organism with a process analogous to natural selection, but the

selection is of patterns rather than of responses. For molar behaviorist, choice is fundamental, so to explain the nature of a particular activity, information regarding the other available activities is fundamental. As Rachlin (2011) put it, molar behaviorism “views mental life in terms of the interaction over time between the environment and the organism as a whole” (p. 210).

Conclusion

More than 50 years ago, in a critique of Watson's behaviorism, Bergman (1956) said, “Virtually every American psychologist, whether he knows it or not, is nowadays a methodological behaviorist. That goes for those who glorify John B. Watson as well as for those who belittle him” (p. 270).

Bergman's statement is still valid. Most psychologists in the world, whether they accept it or not, are methodological behaviorists because their basic data is some form of measurable behavior. Watson's behaviorism was one of the several kinds of methodological behaviorism that, according to Moore (2001), have existed. For most methodological behaviorists, however, behavior is not the Psyche, but the way to reach it. According to Bergman (1956), the main contribution of Watson to psychology was methodological and “merely a footnote... though a most important one” (p. 268). Perhaps his contribution has not been fairly valued. I think that arguing that behavior is the proper subject matter of psychology was his main contribution, which was neither as small as a footnote nor as important and solid as the system that Skinner created. Today, psychology as Skinner conceived is the dominant behavioral paradigm, but as the advent of molar behaviorism indicates, the notion of behavior as the Psyche has been and will keep changing.

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