BEHAVIOROLOGY AND DIALECTICAL MATERIALISM: ON THE WAY TO DIALOGUE

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In Vygotsky's words, Marxist psychology proceeds along the path of American behaviorism only to a certain point (1926). I suppose Vygotsky was mistaken. Behaviorism of his time was as immature as Marxist psychology, and much water has flowed under the bridge since then. Contemporary behaviorology is compatible with dialectical materialism. Here I will particularly examine three aspects. Firstly, materialistic interpretation of causality is crucial for both of them. Secondly, cause and consequence are dialectically related in selection by consequences, so it is in fact a dialectical model of behavior determination. Thirdly, laws of dialectics are applicable to behaviorology.

Keywords: radical behaviorism, behaviorology, dialectical materialism, determinism, Skinner.

Every science needs philosophy. Perhaps, it is true that in the laboratory we are neither idealists nor empiricists nor dialectical materialists, but experimentalists, but as Skinner wrote, "a theory is never overthrown by facts, but only by another theory" (Skinner, 1961, p. 240). A theory underlies facts, and philosophy underlies a theory. Therefore, philosophy is inescapable, and behaviorology[1] is forced to seek after its philosophy as any other science.

There are many interpretations of Skinner's works, and behavioral materialism is the most authentic one (Ulman, 1998). My main thesis is that dialectical materialism is compatible with behaviorology, but there are some problems here.

[1] Following E.A. Vargas, we define behaviorology as a science addressing the contingent relations between actions and other events. He also makes a very significant remark that "Its Skinnerian contingency-based framework of interpretation, with its firm exclusion of agency, distinguishes behaviorology from other sciences of behavior" (Vargas, 2000, p. 44).

a) Firstly, dialectical materialists are often inclined to interpret Skinner's theory as *mechanistic* materialism (Leontiev, 1978). They are obviously wrong in this case (if we mean *behavioral* materialism).
b) Secondly, there are a lot of forms of dialectical materialism, and some of them are even incompatible with materialism itself. Many dialectic materialists incautiously use traditional psychological terms (mind, consciousness, motive and so on), and this leads to a mess. For example, Reese considers dialectical materialism as a form of contextualism (Reese, 1993). We also know that contextualistic interpretations of radical behaviorism exist, too. For example, Jacobson wrote that "contextualism is essentially synonymous with radical behaviorism, a term which is somewhat misleading" (Jacobson, 1997, p. 439). Nevertheless, it was Watson who fairly stated, "behaviorism is new wine that cannot be poured into old bottles" (Watson, 1929). This is also true with regard to dialectical materialism (in behavioral sciences especially). It needs a new vocabulary, and Skinner's theory can provide it.

So, what is dialectical materialism? "Dialectical" means (1) that the universe is an integral whole in which things are interdependent rather than a mixture of things isolated from each other, and (2) that the material world is in a state of constant motion. "Materialism" holds that the only thing that exists is matter. Dialectical materialism combines the elements of naturalism of Marx, Hegelian philosophy and French positivism (Wallon, 1963).

What does dialectical materialism mean in behavioral sciences? It is fallacious to believe that it is the direct application of the theory of dialectical materialism to the problems of behavior. As Vygotsky wrote, "we are in need of an as yet undeveloped but inevitable theory of biological materialism and psychological materialism as an intermediate science which explains the specific application of the abstract theses of dialectical materialism to the given field of phenomena" (Vygotsky, 2005, p. 173). Vygotsky fell into a net of traditional terms, but his main idea is clear. Dialectical materialism in behavioral sciences is *behavioral materialism*. By some amazing fluke, behaviorologits gave the same name to the scientific philosophy underlying behaviorology. Ulman suggests the following terms: *scientific materialism* (the materialist orientation among

natural scientists), *selectionistic materialism* (the materialist orientation among researchers in the life sciences); and *behavioral materialism* (the materialist orientation in behaviorology) (Ulman, 1998).

For true dialectical materialists, the attributes "dialectical-materialist" or "Marxist" in fact mean "scientific." For example, Vygotsky wrote, "everything that was and is genuinely scientific belongs to Marxist psychology. This concept is broader than the concept of a school or even a current. It coincides with the concept scientific per se, no matter where and by whom it may have been developed" (Vygotsky, 2005, p. 188). Behaviorology is the scientific study of behavior (within the Skinnerian contingency-based framework), so we can carefully examine whether behaviorology contains dialectical elements. If Vygotsky is right, we will find them.

However, let us take a step back. I have already written that dialectical-materialist psychologists are inclined to interpret Skinner's theory as mechanistic materialism, but this is not the only accusation of behaviorism.

Teplov wrote, "Dialectical-materialist psychology is directly opposed to behaviorism. The basic task of Soviet psychology is to discover the materialist explanation of man's psyche and consciousness" (Teplov, 1957, pp. 258-259). He also contended that behaviorism sprang from idealism, because it asserted that "the psyche and consciousness are only accessible to introspective knowledge and so cannot be studied by objective method" (Ibid., p. 259). If there is the truth in these statements, it concerns methodological behaviorism. Skinner stated, "thought is not a mystical cause or precursor of action, or an inaccessible ritual, but action itself, subject to analysis with the concepts and techniques of the natural sciences and ultimately to be accounted for in terms of controlling variables" (Skinner, 1957, p. 449). Moreover, "no major behaviorist has ever argued that science must limit itself to public events" (Skinner, 1967, p. 325). Therefore, behaviorology takes the view that private events including thinking are accessible to the methods on natural sciences.

Another prominent dialectic-materialist psychologist pointed out that "behaviorism follows the mechanist schema: stimulus – response. Its description of external connections between stimulus and reaction is in keeping with the pragmatic, generally *positivist* methodology" (Rubinstein, 1957, p. 272). So dialectical materialists assert that behavior-

ism is not only mechanistic, but also positivistic. But as Smith showed, radical behaviorism is aligned with materialism, not with pragmatism or positivism (Smith, 1986). Skinner wrote himself, "the physicalism of the logical positivist has never been good behaviorism" (Skinner, 1967, p. 325).

There is a reason why Teplov, Leontiev and Rubinstein deprecated behaviorism so much. And the reason is that psychology and behaviorology are incommensurable (Fraley & Vargas, 1986). This incommensurability springs mainly from dualism that is predominant in psychology, though often latently. Despite the fact that Soviet psychologists formally dissociated themselves from dualism and interpreted psychic processes materialistically as the product of highly organized matter, they were *still* dualists who used mentalist terminology. We should understand that dialectical-materialist psychology is not a natural science. Kedrov's views on the position of psychology among sciences were generally accepted. He followed Engel's division of the world into three domains (nature, society and thought) and suggested a triangular classification of the sciences (Kedrov, 1985; Braun & Baribeau, 1984).

Figure 1. Kedrov's classification of the sciences

A circle unifies sciences in the order of emergence of forms of matter (nature → society → thought | natural sciences → social sciences → philosophy). We see that psychology falls out from this circle of sciences.

It is neither a natural science nor a social science, nor a philosophical science, though it has the most close ties with philosophy (Kedrov, 1985). At the same time, behaviorology is undoubtedly a natural science, so it is incompatible with psychology even from the dialectical-materialist point of view.

But when we compare behaviorology and dialectical-materialistic psychology, the key figure is already mentioned Vygotsky. I would like to provide a rather long quote where positions of Skinner and Vygotsky are juxtaposed.

> Vygotsky's solution had something in common with that of Skinner's: In order to explain the origin of the higher mental functions, he considered it necessary to go outside the subject. These functions are considered to be the products which originated in the culture and were made subjective through processes of social interaction. Higher mental functions – language and signs, even consciousness itself, with its semiotic structure – are nothing but refined forms of interaction. A second characteristic which draws Vygotsky somewhat close to the position of Skinner is what we might call 'instrumentalism.' His [Vygotsky's] unit of analysis was instrumental behaviour. He thought that the possibility of transforming the material world by means of tools established the conditions for the modification of reflexive behaviour and its qualitative transformation in consciousness. This process is further mediated by a special class of tools: those which permit the realization of transformation others. We call these tools 'signs' and they are essentially provided by culture....[Thus,] the fundamental path of development is that which is defined by the internalization of those instruments and signs, by the conversion of the external system of regulation into means of self-regulation. It is this notion which creates a decisive separation between the instrumentalism of Vygotsky and that of Skinner, because Vygotsky thought the systems of self-regulation, when internalized, dialectically modify the structure of external behavior, which can no longer be understood as an expression of reflexes. In other words, consciousness, which was for him [Vygotsky] 'social contact with oneself,' exerts a causal influence over behaviour (Riviere, 1990, p. 204).

We can see here that Reviere believes that Vygotsky's and Skinner's positions are rather close. And we can conclude that the cultural-

historical theory of Vygotsky may have a lot to offer behaviorology in achieving a better understanding of the nature of behavior. Concerning agencyism of Vygotsky, however, we should say that there is no generally accepted solution in that case. Riviere writes that, in Vygotsky's words, consciousness exerts a causal influence over behaviour. But can consciousness be an agency, if "consciousness does not occur as a specific category, as a specific mode of being" as Vygotsky wrote in "Consciousness as a problem of the psychology of behavior"? Vygotsky stated that consciousness is "a very complex structure of behavior" (Ibid.), and Skinner pointed out that self was "a device for representing a functionally unified system of responses" (Skinner, 1953, p. 285). To my mind, they agree in views at this point, and I dare say that for Vygotsky consciousness is not an agency, though his contradictory works allow coming to the absolutely different conclusion. In this respect, Skinner has one indubitable and inestimable advantage over Vygotsky: he created a consistent scientific language, while Vygotsky used traditional terms and thereby his works may be read this way and that. However, Vygotsky's works can be regarded as a manual to application of the dialectic method to psychology, and behaviorologists can take advantage of it.

Summing up this point, we can compare Skinner's and Vygotsky's positions using dialectical laws.

First of all, Riviere correctly points out that both of them "go outside the subject" in order to explain human behavior. In fact, it is the application of the *law of negation* that is the first law of dialectics. On the one hand, Skinner and Vygotsky negate the inner entity, which is the cause of itself. On the other hand, both of them negate the former psychology.

Then Vygotsky tries to use the *law of the negation of the negation*. Strictly speaking, he goes inside the subject turning back to inner causes. As Riviere notes, "the systems of self-regulation, when internalized, dialectically modify the structure of external behavior" (Riviere, 1990, p. 204). And exactly at this point Vygotsky commits a blunder. He did not take into account that the return to the former language was impossible. He follows the right direction, but by a wrong bus. It may sound strangely enough, but a behaviorist has also to go inside the subject, if he tries to follow dialectics. Ant it is the problem of private that concerns the problem of "going inside." We can construct a logical argument.

1. Skinner considers the being of private events. In fact, they are bodily conditions and covert behavior.
2. Nothing can be in existence out of interaction. Mutual connection and mutual conditionality of the phenomena of a material world is one of axioms of materialism.
3. Private events exist, consequently they are causes of something and effects of something.

Covert behavior does have an influence upon overt one. But we should understand that private events do not cause behavior in the sense that cause is used in traditional psychology. First of all, causation is not necessarily direct. Skinner wrote that "the private event is at best no more than a link in a causal chain, and it is usually not even that. We may think before we act in the sense that we may behave covertly before we behave overtly, but our action is not an 'expression' of the covert response or the consequence of it" (Skinner, 1953, p. 279). So Skinner thinks that private events may be at least "a link in a causal chain." And secondly, causation is not necessarily total-lot. It has a probable status.

Skinner pointed out that "we cannot account for the behavior of any system while staying wholly inside it" (Ibid., p. 35). But can we study the behavior staying wholly outside? We have to apply the law of negation of the negation and to go inside a subject for a more complete description of behavior. But when going inside, we have to remember that "A purely private event would have no place in a study of behavior, or perhaps in any science; but events which are, for the moment at least, accessible only to the individual himself often occur as links in chains of otherwise public events and they must then be considered. In self-control and creative thinking, where the individual is largely engaged in manipulating his own behavior, this is likely to be the case" (Ibid., p. 229). We have to save no space for dualism. Private and public events are not physical and mental ones. And if a private event may not be distinguished by any special structure or nature, we can't say that it does not have causal effect on behavior.

In the issue, we can conclude that:

a) The distorted image of Skinner's radical behaviorism dominates in dialectical-materialist psychology.
b) Dialectical-materialist psychology got stuck in the mentalist terminology. It may be related to the paradoxical fact that Marx was

not a consistent materialist, and psychology was an easy target for this inconsistency as compared with natural sciences. In fact, Marx's naturalism is distinct from both idealism and materialism, and unifies both of them (Marx, 1959).

c) However, dialectical materialism is scientific materialism, first and last. The dialectical method demonstrates the power and efficiency in natural sciences (e.g., biology and physics), and behaviorology, as a natural science, can rely on this method, too.

So should behaviorology dialogue with dialectical materialism? I take the view it should. And the most essential thing that behaviorology should learn from this dialog is why dialectical materialism is miscarried as materialism. The dialectical-materialist doctrine tried to stick to the same ideas as behavioral materialism:

a) materialistic monism;

b) determinism;

c) selectionism;

d) study of human behavior within the environment;

e) emphasis on change (control) rather than description.

So why did dialectical materialism fail as materialism in the field of behavioral sciences? The answer to this question is something for the future, but we need this answer. The historical records suggest that different behaviorisms led to cognitivism, idealism, contextualism and so on. Idealistic interpretations of radical behaviorism exist, and behaviorology should be aware of dead-end roads.

The listed similarities are rather general, so in conclusion I would like to give two more specific dialectical elements of behaviorology.

Firstly, selection by consequences is, in essence, a *model of interaction*. Interaction is a dialectical category that rejects the stereotyped notion that cause and consequence are two invariably adversarial poles. Either of interacting sides is the cause of another one and consequence of simultaneous influence of the opposite side. Therefore, we can suppose that selection by consequences is a dialectical model of behavior determination. A consequence of a certain behavior (change in the environment) is simultaneously the cause of that this behavior will happen more often or rarely. Nevertheless, we have to remember that causality and interaction are not interchangeable.

Secondly, laws of dialectic are applicable to behaviorology. Let's take, for example, private and public events. Skinner wrote, "Covert behavior often seems to be like overt except that it occurs on a smaller scale" (Skinner, 1957, p. 434). Can we say that a quantitative change of behavior leads to a qualitative change: a public event becomes a private one (dialectical law of the transformation of quantity into quality)?

There are three generally accepted domains of science: physical, biological, and behavioral. In fact, this division is a ladder of complexity of matter. Development of physical events leads to the emergence of biological events, and development of biological events leads to the emergence of behavioral events. However, any biological event is at the same time a physical one, and any behavioral event is biological and physical. Covert behavior emerges from overt behavior, and can we say that it is the transition of the same order as the transition from, for example, a physical level to biological. If this is true, then we can fairly assert that private events are behavioral events, but, at the same time, they possess some characteristics that are absent at the overt behavior level. For example, Vygotsky stated that inner speech emerges from outer speech, but it has additional properties, for example, it is abbreviated. Moreover, if it is so, then private events open up possibilities to collaboration between behaviorology and dialectic-materialist psychology. On this way, both of them should change. Behaviorology should pay more attention to private events, and dialectic-materialist psychology should be less mentalist.

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