

Logical Behaviorism and the Simulation of Mental Episodes

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The doctrine of logical behaviorism is sometimes criticized for its apparent failure to distinguish the psychological experiences of persons in pain from the behavioral dispositions of persons who have merely decided to imitate pain behavior. The theory is defended against a number of alternative versions of the argument, none of which are determined to provide a decisive basis for rejecting logical behaviorism.

Classical and Logical Behaviorism

The central thesis of classical behaviorism is that every supposedly private or internal psychological experience has a distinctive simultaneous external behavioral manifestation. Naive scientific and philosophical versions of the theory threaten to eliminate references to mental phenomena entirely in favor of publicly observable behavior in a stimulus-response or operant conditioning model. Against this reductive program it has frequently been urged that subjects may enter into certain psychological states without exhibiting any uniquely identifying overt behavior. It is not clear, for example, whether there is any characteristic behavior pattern that distinguishes someone's thinking about a line of T.S. Eliot's poetry from another's quiet contemplation of a verse by Lord Byron. The fact that behavioral science has no immediate prospect of offering satisfactory answers to these kinds of questions underscores philosophical difficulties in the agenda of classical behaviorism.

To avoid the problem a more sophisticated behaviorist theory known as logical behaviorism is proposed. Logical behaviorism does not require that a person in pain simultaneously exhibit observable pain behavior (wincing, verbal complaint, attention to injury, aspirin-seeking behavior), since the pain sufferer may be an accomplished Stoic with tremendous self-control over all muscular reactions to pain. Instead the pain sufferer is said to have a disposition to exhibit specific kinds of pain behavior, or to be such that he or she would exhibit characteristic pain behavior if, counterfactually, certain stimuli or opportunities for expression of the behavior were to occur. The reinterpretation

enables logical behaviorism to overcome some of the obvious errors of naive classical behaviorism (Malcolm, 1971, pp. 80-82; Ryle, 1949, pp. 42-45, 116-153).

Yet it may appear that logical behaviorism is subject to analogous problems about the indistinguishability of dispositions to behave in at least some attempted eliminative reductions of mental events. The conflation of dispositions becomes acute when logical behaviorism is tested by the dispositions of persons actually in pain and others who merely decide to imitate the behavior of persons in pain.

Pain and its Dispositional Counterfeit

In a recent criticism of logical behaviorism, Keith Campbell (1980, p. 72) offers the following objection:

There is further trouble for Behaviorists in the problem of distinguishing real from imitation mental episodes. Consider this argument:

To have a pain is to acquire dispositions to pain-behavior.

To decide to imitate a man in pain is also to acquire dispositions to pain-behavior, maybe the very same set of pain-expressing behaviors.

So having pains and deciding to imitate them are not different sorts of mental episodes.

The argument, which may be called (C1), is supposed to be a *reductio ad absurdum* of the first assumption that to have a pain is to acquire dispositions to pain behavior. Campbell maintains that the conclusion is false, that having pains and deciding to imitate pain behavior are distinct sorts of mental episodes. He writes (1980, p. 73): "Since pains hurt and decisions to imitate them never do, the conclusion is false, and therefore at least one of the premises is false too."

But the argument is invalid. In the conclusion Campbell contends that "... having pains and deciding to imitate them are not different sorts of mental episodes." But of course no one can intelligibly decide to imitate *pains*. At most someone might decide or undertake to imitate persons or the behavior of persons in pain. This makes the conclusion false independently of the truth or falsehood of the premises. The discrepancy is easy to correct. But a more serious fault is that the argument is invalid on modal grounds. The second premise states that *maybe* dispositions to imitate pain behavior are the same as dispositions to express genuine pain behavior. If "maybe" is interpreted as "it is logically possible that" (which seems reasonable in context), then the conclusion cannot be categorical as Campbell formulates it, but must also be merely logically possible or logically possibly true. This version of the argument reads:

(C2) To have a pain is to acquire dispositions to pain behavior.

It is logically possible that to decide to imitate a person in pain is also to acquire the very same set of dispositions to pain behavior as those of a person actually in pain (i.e., *maybe* these sets of dispositions are the same).

Therefore, it is *logically possible* that having pains and deciding to imitate persons actually in pain are not different sorts of mental episodes.

But (C2) is also invalid unless the first premise is logically necessary. This is straightforwardly proved in an elementary system of alethic modal logic. Let $\Box p$ represent the first premise of (C2) as a logically necessary proposition, and let $\Diamond q$ and $\Diamond r$ symbolize the second premise and conclusion respectively as logically possible propositions. The argument then has a standard modal structure.

1. $\Box p$
 2. $\Diamond q$
 3. $(p \ \& \ q) \rightarrow r$
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4. $[(p \ \& \ q) \rightarrow r] \supset [\Diamond(p \ \& \ q) \supset \Diamond r]$ (T8)
 5. $\Diamond(p \ \& \ q) \supset \Diamond r$ (3,4)
 6. $\Box p \supset [\Diamond q \supset \Diamond(p \ \& \ q)]$ (T17)
 7. $\Diamond q \supset \Diamond(p \ \& \ q)$ (1,6)
 8. $\Diamond(p \ \& \ q)$ (2,7)
 9. $\Diamond r$ (5,8)

The schematization shows that (C2) is valid if and only if the behaviorist thesis in the first premise is assumed to be logically necessary. If it is not, then there are semantic models in which $\Diamond q$, $(p \ \& \ q) \rightarrow r$, and p or $\Diamond p$ are true, but r and $\Diamond r$ are false. In no case can the categorical conclusion that logical behaviorism is actually false be derived if the second premise is merely logically possible or logically possibly true. (See Hughes and Creswell [1972, pp. 37, 40] for proofs of theorems [T8] and [T17].)

The effect is to waterdown the conclusion of (C2) to the point where it is philosophically uninteresting. It now entails nothing stronger than the mere logical possibility that behaviorism does not satisfactorily distinguish between genuine pain and decisions to imitate pain behavior. But behaviorism is an empirical theory with experimental support for its hypotheses. To hold that it is logically possible for behaviorism wrongly to identify actual pain experiences with decisions to imitate pain behavior is no more damaging to the theory than to admit (what must be admitted anyway) that it is *logically possible* for the theory as a whole to be false. (It is sometimes alleged that behaviorism is unfalsifiable, and therefore, by Karl R. Popper's criterion, not a genuine scientific theory. [See Popper, 1959, pp. 40-43; 1975, pp. 221, 295.] But the main tenet of scientific behaviorism is that behavior which is reinforced is likely to be repeated. This is clearly contingent, since it is logically possible that behavior be entirely random with respect to any environmental stimuli.)

Modality and Empirical Contingency

The argument can be reformulated in another way by eliminating references to mere logical possibility in the second premise, or, in effect, by striking out Campbell's cautious "maybe". This results in a sound inference only if reliable inductive methods and particular kinds of scientific evidence are available. It states:

(C3) To have a pain is to acquire dispositions to pain behavior.

To decide to imitate a person in pain is also to acquire dispositions to pain behavior; *in fact*, it is to acquire the very same set of dispositions as those of a person actually in pain.

Therefore, having pains and deciding to imitate persons actually in pain are *in fact* not different sorts of mental episodes.

This has the advantage of interpreting Campbell's objection to behaviorism as a matter of fact rather than mere logical possibility. If the second premise is true, then the argument undermines behaviorism on its own terms, as an empirical scientific theory.

The problem is to determine empirically whether or not a person in fact acquires the very same set of dispositions to behave when actually in pain as when deciding to imitate pain behavior. Even if we agree with Campbell that the conclusion is false or at odds with certain pretheoretical data, it remains unnecessary to reject the first premise if the second is subject to doubt. There are two different though related accounts of dispositions to behave in recent philosophical psychology, each of which should be considered in order to help decide the question.

Gilbert Ryle is usually credited with proposing counterfactual analyses of dispositions to behave, and with recognizing their importance in behavioral explanations of so-called private mental episodes (Ryle, 1949, p. 43). The brittleness of a piece of glass is interpreted dispositionally by Ryle as the property of being such that if struck with sufficient force under certain circumstances it would shatter. A so-called private mental episode or internal psychological experience is interpreted dispositionally in much the same way as the property of being such that particular behavioral responses would be elicited from a subject by appropriate stimuli, even if the stimuli never actually occur.

Armstrong (1970, pp. 70-75) provides a similar counterfactual account of dispositions to behave which introduces empirical facts about the physical states of a system that are causally relevant to its counterfactual behavior under hypothetical circumstances. To say that a piece of glass is brittle is not just to say that it would shatter if struck with sufficient force, but that it would shatter because it has a certain molecular structure. So-called private mental episodes are interpreted dispositionally by Armstrong along similar lines in terms of

particular behavioral responses counterfactually brought about in a subject by appropriate environmental stimuli because of causally relevant physical states of the subject's central and peripheral nervous system (Armstrong, 1968, pp. 57-59, 85-88).

We must ask whether behavioral dispositions in Ryle's or Armstrong's sense of the term are likely to be precisely the same in the case of a person who is actually in pain and in the case of a person who has merely decided to imitate pain behavior. It appears that neither analysis of dispositions to behave offers a sense in which it is beyond reasonable doubt to suppose that a person in pain acquires the very same set of dispositions to pain behavior as those involved in deciding to imitate the behavior of someone in pain.

The Rylean counterfactual requirement is evidently unsatisfied in any plausible comparison of dispositions, for there are easily imagined counterfactual circumstances in which persons in pain and pain behavior imitators do not have the very same dispositions to behave. If an imitator were threatened with sufficient punishment, goaded with sufficient reward, or tested with polygraph and drugs like sodium pentathol, then the imitator would probably admit that he or she was not really in pain. But this is not to be expected of a person who is actually in pain. If dispositions are interpreted counterfactually, then the distinct behaviors likely to arise under these sorts of imaginable circumstances argue powerfully against the precise coincidence of dispositions to behave for persons in pain and mere imitators. (The discovery or construction of counterfactuals to bring out differences in behavioral dispositions may encounter special problems in particular cases. The degree and kind of pain to be imitated, the simulator's motives for deciding to imitate pain behavior, and other relevant factors, must minimally be taken into account.)

The argument is equally unacceptable on Armstrong's analysis of dispositions. The matter-of-contingent-fact approach of (C3) invites the empirical observation that any experience of pain in the actual world is likely to be caused by damage to the afferent nerve endings of a living subject, while the nervous system of a mere imitator will probably be undamaged. Differences in the physical states of pain sufferers and imitators are also likely to occur on the chemical molecular and microphysical levels, even if some version of mind-body dualism is true. It is logically possible that the dispositions of pain sufferers and imitators could turn out to be the same. But the assertion is trivial in light of the empirical contingency of behaviorist psychology. The advance of medicine and neurophysiology suggests that as a matter of fact there would most probably be discernible differences in the physical state of a person who is actually in pain as against that of a mere imitator.

Campbell attempts to answer a similar counter criticism when he writes (1980, pp. 73-74):

... there is the defense which fills out the analysis of pains, decisions, and mental episodes generally, by including mention of their causes. Pains are now not just dispositions to pain

behavior, but dispositions caused by bodily damage or malfunction, while their imitations have a quite different set of causes. This is not a successful move, for it implies that someone who feels tickles when others feel pain (i.e., when there is bodily damage or malfunction), but is resolved to conceal this fact by an imitation of pain, really feels pains after all A slight glow of well-being may have no behavioral manifestations at all, yet still exist and be felt. Alternatively, and this is equally fatal, its manifestations may be quite indistinguishable from those of a determination to please the boss by a smart and cheerful demeanor.

Here Campbell also refers to what “can” or “may” be the case, again suggesting that, like (C2), the argument will turn out to be philosophically uninteresting — valid only if the behaviorist thesis is assumed for purposes of indirect proof to be logically necessary.

Campbell (1980, p.73) claims that according to logical behaviorism a paralytic can never justifiably be said to experience pain (presumably because the paralytic is unable to express pain behavior). But this overlooks an obvious counterfactual analysis of the situation that can be understood on behaviorist principles as the paralytic’s disposition to pain behavior. *If* the paralytic were enabled somehow to communicate (a big “if” in practice, but without special philosophical significance for the logical behaviorist examining counterfactual possibilities), then the paralytic would be likely to respond to questions about his or her mental state in such a way as to indicate that he or she is in pain. Of course the behaviorist will never know or be able to tell whether or not the paralytic is actually in pain. But neither will the nonbehaviorist. If sensation is private, then only the paralytic will know for sure. The important thing to determine is how the person would respond to certain stimuli if he or she were not paralyzed or if he or she could communicate without motor ability. These are counterfactual circumstances with crucial consequences for the behaviorist thesis, and there is no apparent compelling reason why the behaviorist should be prevented from appealing to counterfactuals of this type in the analysis of dispositions to behave.

In his final objection Campbell holds that of two persons with similarly damaged nerve endings one *might* experience pain while the other experiences only tickling sensations (which the person may wish to conceal by deciding to imitate the behavior of someone actually in pain). But in the absence of any positive empirical evidence to support the assumption, there is no need to suppose that Campbell’s discussion entails anything more than the mere logical possibility that pain and tickling could be experienced by subjects as a result of the very same condition of the nervous system. This consideration also refutes Campbell’s objection about the disposition of a person who feels a warm glow of well-being as against that of someone who resolves to feign such a glow for the benefit of his employer. The cases are not really different in kind.

For these reasons, (C3) cannot be accepted as a plausible contingent or matter-of-fact argument for rejecting logical behaviorism. It is perhaps logically possible for the imitator to be in precisely the same physical state as a person who is actually in pain. But this entails only that dispositional behaviorism,

fitted out with a mechanistic or physiological interpretation of dispositions, is a contingently true or false hypothesis of empirical science, and not a necessary truth in the ordinary philosophical sense of the word. But surely this is known independently of Campbell's argument.

Generality and Inductive Limitations

If the second premise and conclusion of (C1) are weakened in generality rather than modality, then another reformulation of the argument is obtained. We may, finally, consider:

(C4) To have a pain is to acquire dispositions to pain behavior.

To decide to imitate a person in pain is also to acquire the very same set of dispositions to pain behavior as those of a person actually in pain *in at least some cases* (i.e., *maybe* these sets of dispositions are the same).

Therefore, having pains and deciding to imitate persons actually in pain are not different sorts of mental episodes *in at least some cases*.

The change from full generality to existential generalization may be regarded as an alternative to the previous modal interpretation of Campbell's "maybe" in the second premise of (C1). But Campbell does not offer the sort of empirical evidence required to uphold the existential generalization. Without concrete support for the second premise, a false conclusion does not justify rejecting the behaviorist thesis.

It is difficult to suppose that individuals actually in pain and others who have merely decided to imitate pain behavior ever do have precisely identical dispositions to behave. There are positive reasons for thinking that no comparison of persons and their dispositions to behave in the actual world will ever satisfy the demands of the argument. It is probable both on the counterfactual and counterfactual-physical-state analyses of dispositions that as a matter of contingent fact anyone who is actually in pain will have different dispositions to behave than even the most skillful imitator. The burden rests with those who believe that the dispositions of pain sufferers and imitators sometimes indistinguishably coincide in the actual world to document this with the appropriate evidence. But so far this has not been done, and it seems likely from what we know about psychology that empirical evidence of the required sort will never be produced. There may be difficulties even in sophisticated refined versions of logical behaviorism which should lead us ultimately to repudiate the theory. But Campbell's objection concerning behavioral dispositions and the simulation of mental episodes does not constitute conclusive grounds for rejection.

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