

THE SHADOW OF METAPHYSICS

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ABSTRACT

What, if any, are the roles of traditional metaphysical concerns in a natural science of behavior? There are questions and issues that seem to frame the positions of many who call themselves “behaviorists,” such as mind-behavior or mind-brain relations, realism *vs.* pragmatism, contextualism *vs.* mechanism, description *vs.* explanation, and the meaning of “behavior” itself, all and more of which might be assigned to metaphysical arguments. Positions such as these reflect the many different varieties of behaviorisms, but, in general, seem to have relatively little influence on, or relevance to, how *sciences of behavior* are actually conducted—that is, by naturalist-empiricist approaches, as with other sciences worthy of the name. Of course, practices in the natural sciences are not without metaphysical stances, but the standpoints mentioned above largely reflect irresolvable or confused verbal entanglements that, at best, might be addressed by an analysis of verbal behavior (e.g., how and why do we come to talk in these ways?). Aside from such an analysis, the positions themselves, while fun to engage, have little or no empirical or even theoretical content and thus seem divorced from a “thoroughgoing” science of behavior.

Key words: metaphysics, behaviorism, scientific realism, pragmatism, coherence, plausibility

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THE SHADOW OF METAPHYSICS

No resolutions

“Metaphysics” stems from the Greek, meaning “after natural things,” that is, what comes after nature. It thus attempts to address issues beyond natural science as we have come to know and practice it — the nature of existence, categories, causality, truth, mind, agency, meaning, and other largely open questions vexing mostly Western philosophers for at least 2500 years (e.g., Hales, 1999; Koons & Pickavance, 2015). As a division of philosophy, to engage with metaphysics is to do battle with such issues, largely using the armaments of reason. I emphasize “open” as a euphemism for “undecidable,” in the sense of there being no possibility of achieving rational closure, though claims have certainly been made otherwise—the reputations of all the greatest philosophers to the present day have depended on their having “made progress” in wrestling with what many consider the deepest questions human thought can conceive. Just what progress means in addressing such questions, I’ll leave for the reader to ponder. But, in no way, do I wish to trivialize or otherwise dismiss such efforts by no doubt some of the smartest and wisest people who have ever lived and from whom we have learned much about what it means to be a questioning human (e.g., Magee, 1999). For example, philosophical positions on metaphysical issues have brought great enlightenment, as well as profound tragedy, to human governance (see, e.g., Berlin, 2013a; 2013b). We should also remember that significant aspects of our natural sciences likely emerged from philosophical questions and certainly remain tied to them in ways that I’ll mention here. Certainly, science has directly addressed many of the questions first raised by metaphysics, such as: what is the world made of, what is motion, did time have a beginning, how do we learn about the world, and a host of other issues; that is, to a significant extent, a number of metaphysical matters have been absorbed into our systematic studies of nature.

Nevertheless, the scope of what is labeled metaphysics in the numerous books and papers on the topic is, in my amateur judgement, unclear. This ambiguity seems not only to apply within philosophy itself, for example, metaphysics’ relation to epistemology, but is especially true at the borders between philosophy and science. Two continuing issues here are: (1) to what extent might science contribute to addressing questions in metaphysics, and (2) to what extent might metaphysics contribute to advances in science (Slater & Yudell, 2017). I’ll return briefly to both issues later.

Human creations, like the natural sciences—surely our most successful endeavors for achieving understanding, prediction, and control of nature—encompass conceptual frameworks reflecting some of the same open metaphysical issues I mentioned earlier. Any standard treatment of the philosophy of science will include such topics as realism versus anti-realism, causality, reduction, the nature of explanation, essentialism, emergence, and other hotly-debated and thus unresolved, and presumably unresolvable, issues (e.g., Curd, Cover, & Pincock, 2013). One question that may occur to the reader at this point is: How can a science be so successful, yet display so much dissent over its “fundamental” conceptual framework? I’ll also return to this question later.

Which behaviorism?

What about our self-proclaimed natural science of behavior analysis? We think of its conceptual framework as “behaviorism”—said to be *the* philosophy of our science. But, right away, we have to ask: Which behaviorism—radical, teleological, molar, theoretical, contextualist, and who knows what else (cf. O’Donohue & Kitchener, 1999)? “Behaviorism” is a family-resemblance term with many varieties that reflect one central theme: we come to understand the

organism through its behavior. But the meaning of both “behavior” and “to understand” varies considerably among different behaviorisms. Before commenting on this diversity, one might consider the oft-repeated assertion (e.g., Donahoe, 1997; Marr & Zilio, 2013; Skinner, 1974) that behavior analysis rightly belongs in the biological sciences, in that behavior is an essential biological feature of organisms—what else could it be? This implies that we should then share our conceptual framework with the philosophy of biology. To some extent this is true: Selection and how and what gets selected, variation, reduction, emergence, the nature of laws, models, and mechanisms all have some relation to issues in a behavior science (e.g., Garvey, 2017). In addition, the character of categories (e.g., what is a species?) could be analogous to what counts as behavior, though I would argue not. For example, questions of the nature and origin of speciation in biology (e.g., Coyle & Orr, 2004) are comparatively well-posed and actively researched, including the roles of natural and sexual selection in reproductive isolation (there are dissenters however, e.g., Ghiselin, 1997; See, also, Coyne & Orr, 2004, Chapter 2). In contrast, “What counts as behavior?” is not a well-posed question, never mind the subject of any research program. It reflects an ideological, not a scientific, issue as I’ll try to unfold.

As earlier mentioned, modern behavior analysis, basic and applied, appears to present a motley set of conceptual frameworks. To over-simplify, differences among these can largely be characterized by concerns of (1) what counts as behavior and (2) patterns of explanation. The first, what counts as behavior, is not only about the updated but venerable molar-molecular debate (e.g., Shimp, 2020), but about the meaning of “observability.” Some behaviorists (e.g., Baum, 2017, 2018; Rachlin, 2014) appear to adopt a radical empiricist perspective, reminiscent of Watson, that only *directly* observable behavior should be the subject of a science of behavior—a *requirement on its subject matter not shared by any other natural science*. “To be in pain *is* to show it” is but one of the claims of this perspective, a denial of any distinction between first- and third-person aspects, leading to absurd implications (e.g., Marr, 2011). Also, extended patterns of behavior and pie-charts of time-allocation to various activities are, for examples, the proper subjects and measures in this austere science of behavior. Not that these are without value, but just how such behaviors arise and change seems of less interest. Moreover, according to these views, the causes, proximal and distal, of behavior are *always* found in the environment—current and historical—even though many such causes, particularly historical, may be unobserved, indeed, likely unobservable, in principle. As already indicated, these positions rule out any consideration of what are deemed “private events,” which, in many manifestations, occupy much, if not most, of daily human experience—as everyone knows—along with any causal status that can be attributed to such events. “Mental causation” is a *bête noire* in most behaviorist circles, but, in significant cases, one is referring to *covert behaviors*—contemplating, recollecting, planning, calculating, imagining, and many other activities, all with potential consequences that may or may not be manifested in overt behavior. In general, there is a seamless interplay between overt and covert activities that characterize much of human experience. Imagine a chess match. One could describe it simply as a set of moves and counter-moves until either “draw” or “checkmate” is declared—all overt behaviors. (And many games are played without actually moving pieces at all—the game is played verbally.) In any case, the participants would have a great deal more to say than simply what moves were made! The moves themselves have controlling variables or actions, most of which are covert. Yes, to identify certain activities as “covert” (and thus to make “overt” meaningful) is an attribution with metaphysical shading related to the status of “unobservables” (see below), but demanding direct observability for a science of behavior not only stretches credulity far beyond its elastic limit, but severely constrains how that science could contribute any

THE SHADOW OF METAPHYSICS

understanding to what largely makes us human. All this aside, there are empirical studies of “talking to oneself” (e.g., Fernyhough (2016).

The second issue, patterns of explanation, involves a variety of concerns: description versus explanation, the nature and role of theory, and even Pepper’s (1942) self-described simplistic “world hypotheses” as in “contextualism versus mechanism.” With a bit of conceptual stretching, this topic is also inherent in the old “realism versus pragmatism” debate (Marr, 2009). I’ve always found this latter kerfuffle strange for a number of reasons, the principal one being that there are numerous varieties of both realism and pragmatism, and this complexity is largely ignored in discussions by behavior analysts. At least some forms of pragmatism admit to variations of “realistic” positions (e.g., Misak, 2013; 2016). I should emphasize in the following that the stripe of realism most relevant here is “scientific realism,” an enterprise with numerous nuances and intricate arguments, again, without resolutions (Chakravartty, 2017; Devitt, 1991). I’ll begin with the “simple” view that by scientific realism we mean that the world described by the natural sciences is real apart from its possible interpretations.

Observability

Most of the discussions about scientific realism are focused on the status of certain unobservable entities, such as quarks, electrons, black holes, stellar interiors, dark matter, etc. But even to begin addressing these complex questions, most natural scientists would hold certain starting positions. Without these assumptions, asserting the existence of at least some of the unobservables proposed by natural scientists would be nonsensical. First, there is the common-sense assumption of the existence of *observable* physical entities such as the moon, stars, cats, cows, crows, and the patient readers of this paper. Moreover, by and large, such entities are what they seem to be; under any ordinary conditions, none of these can be said to be illusions in any comprehensible sense of that word. Second, most of the natural world is independent of our interests and concerns. We do not make the universe and all its constituents; it does not emerge from our consciousness, collective or not. To anyone but the most impermeable skeptic or the woefully ignorant, the statements, “The earth has been around for some 4 billion years” and “The moon is older than I am” are reflective of *facts*, not of illusions or, for that matter, not of mere “pragmatic” interest.

The favorite pragmatic catch phrase of some behavior analysts, “successful working,” raises the question why some efforts are successful and others are not. Applied to science (and engineering) in general, powerful and pervasive successes, as well as dismal failures, must reflect some important relations to the world as it is. At the least, our best theories have provided what has been termed, “empirical adequacy.” At most, they can provide a true, or approximately true, description of the world. In any case, as already mentioned, the “realism-antirealism” dispute in the philosophy of science is largely not about whether the moon or Stockholm or Donald Trump could be “mere appearances,”—only a metaphysical idealist could seriously suggest that—but, rather, about the ontological status of certain proposed theoretical entities not directly observable, maybe even in principle. In behavior analysis, theoretical entities or processes can be found in certain quantitative models of behavior. For example, Staddon’s (2014) models incorporate dynamic states within the organism. Indeed, Staddon calls his behaviorism “theoretical.”

We might apply such concerns to the “private events” debates, though there is nothing theoretical about the sorts of activities described above as private; yet, the *interpretation* that these kinds of events are *functional behaviors* is a theoretical ploy, providing a more consistent and comprehensive picture of human action. An alternative interpretation is that such events are solely

neurophysiological activities (e.g., Rachlin, 2014). Why, then, not say the same thing about *overt* behaviors?

What good is it?

I raised the question earlier of how sciences can be successful, yet express deep disagreements about background (e.g., metaphysical) assumptions. As previously noted, some philosophically inclined behavior analysts have argued vigorously over a variety of questions, but both basic and applied behavior analysts continue to publish studies in the *Journal of the Experimental Analysis of Behavior*, the *Journal of Applied Behavior Analysis*, and other sources that rarely, if ever, mention any of the topics I've discussed. This lack occurs in other natural sciences, as well. In fact, one can get some perspective on this point through even a casual glance at general physics, chemistry, or even biology texts—they attempt to present the principles and other content of physics, chemistry, and biology with nary a mention of “conceptual issues.” Like our colleagues in physics, chemistry, and biology, who “do” physics, chemistry, or biology, we “do” behavior analysis by exploring schedules, discounting, relational frames, choice, and a host of other interesting subjects and their applications, with various degrees of quality and success. If one were to ask these investigators what they consider essential “background” assumptions in conducting their work, I suspect one would get a hodgepodge of replies, including bafflement. The point here is that whatever underlying assumptions may guide the conduct of our science, they appear to have little, if any, significant role in enabling us to do better experiments, to collect and analyze more revealing data, to write more persuasive grant proposals, to explore new techniques and topics, and to perform other activities considered “scientific.”

If one had to state an essential background assumption it might be: *There is a discoverable order to behavior—in other words, there can be a science of behavior.* Not that behavior lacks enormous complexity, no doubt far beyond the reach of behavior analysis, but that is another story. The assumption of a discoverable order can, of course, be unpacked ad nauseam, but don't ask the working scientist or practitioner to do that! I would emphasize that such an assumption is not a matter of blind faith; the evidence is overwhelming, as it is with phenomena of interest in other natural sciences. However, I should emphasize that it is an assumption strengthened by *induction* and thus, from a metaphysical perspective, not subject to logical justification, but a useful habit, nonetheless.

Boot-strapping scientism

Metaphysical commitments for a science like behavior analysis—whatever one might or might not propose—could be considered an *internal* matter for the science. But a behavior science must include the behavior of the scientist, verbal and non-verbal, as a proper subject of study—that is, the science must presumably take an *external* view of such practices, including underlying assumptions. Of course, this view can be characterized as tail-chasing or boot-strapping, in that the putative external viewpoint must presumably be based on the same metaphysical commitments as the internal viewpoint. But further considerations of the internal versus external perspectives on a behavioral science raise some deeper issues when addressing a question like the value of a given science to philosophy. Behavior analysis makes the claim of being “thoroughgoing.” What this means (if anything) is that *all* human behavior is subject to its concerns—including philosophy itself, metaphysical commitments, and all, as “verbal behavior.” This is perhaps the ultimate in

THE SHADOW OF METAPHYSICS

scientism—a boot-strap scientism. Thus, philosophy, in principle, is as subject to scientific treatment as photosynthesis. That such a program could be realized is beyond doubtful.

Let's be realistically pragmatic.

Skinner (1957) in Chapter 18 of *Verbal Behavior*, on logical and scientific behavior, overwhelmingly emphasized the effective consequences of scientific and logical practices. And, thus, we return to the question of why some practices are successful and others are not. Again, something in these practices must reflect the world as it is.

But, in what senses are metaphysical commitments *useful*? Presumably, not in the sense of leading us to new discoveries, or better means of control, or more accurate predictions—our effective basic and applied practices don't seem to depend on these commitments. I think we have to fall back on both *coherence* and *plausibility* as values, that is, *what makes sense*. If I say, for example, that an experiment's data conform to the generalized matching law, but all we know is simply based on our perceptions, or on “mere appearances”—that we can't know anything about the “world as it is”—then what are we talking about? Of course, no one can prove (or disprove) that the world we experience is not an illusion; or, at the least, that our senses raise an impenetrable veil over such a world, but then what? Earlier, I mentioned the possibility of science helping to address metaphysical issues. Here is where we might appeal to science to get a better perspective on our putative perceptual limitations. Kant, for example, emphasized our bodily limits in accessing the phenomenal world and, thus, our limits in perceiving “things in themselves,” what he called the noumenal world—a combination of empirical realism and transcendental idealism. Variations in views of this sort continue to the present day. We surely have limits in our contact with the world, many of which we have overcome through scientific advances, but when it comes to most things with which we actually engage—trees, birds, aquavit, sunsets—evolutionary mechanisms have more-or-less selectively *tuned* us, and the rest of surviving biological beings, to the world as it is—a world independent of our interests and concerns and here billions of years before we came on the scene. Of course, this analysis is subject to the illusion argument, as well—but again, I have to appeal to coherence and plausibility as values without a formal, logical justification. That aside, the analysis also applies to our verbal behavior, as it was also shaped by the world as it is—nature taught us how to talk and what to talk about, including the development and exercise of logical argument (e.g., Maddy, 2014; Marr, 2015).

There is an interesting wrinkle here, and it has to do with challenges to the whole enterprise of metaphysics, largely by the “linguistic turn” in analytic philosophy; essentially, metaphysics is just about words, words, words, with little, if any, meaningful content. In a famous quote that the late Wittgenstein directed, in part, to metaphysics, “For philosophical problems arise when language *goes on holiday*” (2009, p. 23e). For nearly the whole last century, analytic philosophy dominated academic philosophy and continues to have a powerful presence. This a movement with so many conflicting manifestations (including different views on metaphysics), that it is difficult to characterize (e.g., Martinich & Sosa, 2005; Glock, 2008). For example, both early and late Wittgenstein reflect opposing views (Wittgenstein, 1922/1999, 2009). This is not the place to discuss its very complex history, but, in recent decades, metaphysics has had a revival, and linguistic analysis seems to have faded. However, the later Wittgenstein, as presented, for example, in the works of Norman Malcolm (1977) and Bennett & Hacker (2003), have delivered powerful, *anti-metaphysical* critiques of concepts and theory in cognitive psychology and cognitive neuroscience. Similar appraisals have been made in response to the radical empiricists'

MARR

positions on privacy (e.g., Marr, 2011). The goal in these kinds of critiques is to achieve conceptual clarity; but how successful they have been is unclear.

In conclusion, I should emphasize that “behaviorism,” with the emphasis on “ism,” –of whatever flavor—is a set of *beliefs, not a science*; thus, whatever the particular commitments and constraints those beliefs may be, the contributions of the science and its applications are ultimately what truly matter. To the extent the shadow of any “ism” casts darkness on what a science of behavior can accomplish, it obscures the promise of that science.

THE SHADOW OF METAPHYSICS

References

- Baum, W.M. (2017). Ontology for behavior analysis: Not realism, classes, or objects, but individuals and processes. *Behavior and Philosophy*, 45, 64-78.
- Baum, W.M. (2018). Multiscale behavior analysis and molar behaviorism. *Journal of the Experimental Analysis of Behavior*, 110, 302-322.
- Bennett, M.R. & Hacker, P.M.S. (2003). *Philosophical foundations of neuroscience*. Malden, MA: Blackwell.
- Berlin, I. (2013a). *The crooked timber of humanity* (2nd ed.). Princeton, NJ: Princeton University Press.
- Berlin, I. (2013b). *Against the current*. (2nd ed.). Princeton, NJ: Princeton University Press.
- Chakravartty, A. (2017). Scientific realism. *The Stanford Encyclopedia of Philosophy* (Summer 2017 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/sum2017/entries/scientific-realism/>.
- Coyne, J.R. & Orr, H.A. (2004). *Speciation*. Sunderland, MA: Sinauer.
- Curd, M., Cover, J.A., & Pincock, C. (2013). *Philosophy of science* (2nd ed.). New York, NY: Norton.
- Devitt, M. (1991). *Realism and truth* (2nd ed.). Princeton, NJ: Princeton University Press.
- Donahoe, J.W. (1997). On the relation between behavior analysis and biology. *The Behavior Analyst*, 19, 71-73.
- Ferneyhough, C. (2016). *The voices within*. New York, NY: Basic Books.
- Garvey, B. (2007). *Philosophy of biology*. Montreal, Canada: McGill-Queens University Press.
- Ghiselin, M. T. (1997). *Metaphysics and the origin of species*. SUNY Press.
- Glock, Hans-Johann (2008). *What is analytic philosophy?* Cambridge, UK: Cambridge University Press.
- Hales, S.D. (1999). *Metaphysics: Contemporary readings*. Belmont, CA: Wadsworth.
- Koons, R.C. & Pickavance, T.H. (2015). *Metaphysics: The fundamentals*. Malden, MA: Wiley Blackwell.
- Maddy, P. (2014). *The logical must*. New York, NY: Oxford University Press.
- Magee, B. (1999). *Confessions of a philosopher*. New York, NY: The Modern Library.
- Malcolm, N. (1977). *Memory and mind*. Ithaca, NY: Cornell University Press.
- Marr, M.J. (2009). The natural selection: Behavior analysis as a natural science. *European Journal of Behavior Analysis*, 10, 105-120.
- Marr, M.J. (2011). Some public perspectives on the problem of privacy. *European Journal of Behavior Analysis*, 12, 447-459.
- Marr, M.J. (2015). Mathematics as verbal behavior. *Behavioural Processes*, 113, 75-80.
- Marr, M.J. & Zilio, D. (2013). No island entire of itself: Reductionism and behavior analysis. *European Journal of Behavior Analysis*, 14, 241-257.
- Martinich, A.P. & Sosa, D. (Eds.) (2005). *A companion to analytic philosophy*. Malden, MA: Blackwell.
- Pepper, S.C. (1942). *World hypotheses: A study in evidence*. Berkeley, CA: University of California Press.
- Rachlin, H. *The escape of the mind*. (2014). New York, NY: Oxford University Press.
- Shimp, C.P. (2020). Molecular (moment-to-moment) and molar (aggregate) analyses of behavior. *Journal of the Experimental Analysis of Behavior*, 114, 394-429.
- Skinner, B.F. (1957). *Verbal behavior*. Englewood Cliffs, NJ: Prentice-Hall.

MARR

Skinner, B.F. (1974). *About behaviorism*. New York, NY: Knopf.

Slater, M.H. & Yudell, Z. (Eds.) (2017). *Metaphysics and the philosophy of science: New essays*. New York, NY: Oxford University Press.

Staddon, J.E.R. (2014). *The new behaviorism* (2nd ed.). New York, NY: Psychology Press.

Wittgenstein, L. (1922/1999). *Tractatus logico-philosophicus*. Mineola, NY: Dover Publications.

Wittgenstein, L. (2009). *Philosophical investigations* (4th ed.). Malden, MA: Wiley-Blackwell.