

What's wrong with 'Behavioral Science'?

Letter from William T. Powers to Philip J. Runkel, November 8, 1985
Letter copied from *Dialogue Concerning the Two Chief Approaches to a Science of Life*
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The letter discusses the book *Living Systems* by James Grier Miller
(McGraw Hill, 1978, 7.5x9.2 inches, xli, 1,102 pages).
Here are excerpts from the book jacket:

Firmly grounded in current scientific knowledge, *Living Systems* shows how biological and social systems are organized and operate at each of seven hierarchical levels: *cells*; *organs* (composed of cells); *organisms* (independent life forms); *groups* (families, committees, working groups, etc.); *organizations* (communities, cities, corporations, universities, multinational corporations, etc.); *societies* or nations; and *supranational systems*. Since cells evolved, about three billion years ago, the general direction of evolution has been toward ever-greater complexity until about 4,500 years ago, when the most complex level, the supra-national system, evolved.

Warren Bennis, *social scientist*; former president of the University of Cincinnati:

Living Systems is an epochal book. It is elegant in style and approach and possesses a conceptual and integrative lust that manages to revive in the reader a sense of what the behavioral sciences are all about. This is a lifetime's effort, pure and simple, and worth every minute of it. What James Grier Miller achieves is one of the most important syntheses of those sciences related to man in relationship to his environment. What we have here is a classic that will influence the behavioral sciences far longer than the lifetime it took Miller to write it.

Dear Phil,

My argument with Miller is similar to the argument I have with most theoreticians in psychology, flavored to an extent I am in no position to assess by my own professional jealousy. In my defense, I try to be honest and keep a fine strainer over the drain, but what I find after the last gurgle is usually just a wad of hair.

Miller, like many others, says things with which I can agree. But that isn't enough for me. Before they came to understand what I am about, even strong supporters used to send me reams of useful material showing that so-and-so back in 1937 (e.g., Tolman) stuck his neck out and insisted that behavior is, e.g. purposive. I would write back and say thanks, but I would also explain that thousands of people have had the feeling that behavior is purposive, and have said so, and I can't possibly acknowledge them all. Nor am I inclined to: if all I had to say was that I, too, think behavior is purposive I might as well have stuck to engineering. So my friends caught on, and I no longer get such materials unless the author also

offers an explanation of what a purpose is and some attempt to say how purpose works, from which the conclusion follows irresistibly. Needless to say, I don't get much of that stuff any more.

It's easy to make proposals to the effect that this or that phenomenon exists or occurs. Most "theories" in the life sciences do no more than that. To me, however, such proposals are just the start of a theoretical effort: the real question is not what happens, but HOW IT WORKS. Anybody can guess about properties of behavior, and find both data and other people to agree with the guess (given a friendly interpretation in both cases). But to find an explanation that not only fits the data but is internally consistent, rigorously defined, non-statistical, and plausible in terms of what we know about the physical capabilities of an organism—that is the real problem. That's the only problem I consider worth the effort to solve. I don't care if other people agree or disagree. That's a side-issue to me. All I want is a model of

behavior that I can't poke holes through, a model I can test, a model that doesn't depend on my faith in it or on unspoken assumptions. I am my own worst critic: I put questions to my own efforts that few others even know how to ask. This is not because I'm smart, but because I KNOW SOMETHING THEY DON'T KNOW: control theory.

Behind essentially every theory of behavior I have ever seen, Millers included, is a basic assumption about the nature of behavior. It's expressed under various names: stimulus-response, input-output, antecedent-consequent, dependent variable-independent variable, and so on. The assumption is that behavior results from influences acting on organisms. This is the only model of a behaving system that most life scientists understand. It underlies EVERYTHING they say, Let me quote Miller, p. 448:

Some individuals are stronger, larger, healthier, more talented, better educated, or more disposed toward a certain activity than others.

Who could argue with that?

Consequently, within the range of species norms for different processes, individual organisms differ in their characteristic input-output relationships.

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but to the assumption: who says organisms have any characteristic input-output relationships in the first place? I can prove, in fact, that they don't (all you have to do is consider the role of reference signals—or just look at behavior). This results in my losing interest in whatever conclusions follow.

Aside from the fact that the “consequently” could just as well go with the first sentence (moved to be the second one), this quote shows how the old input-output model is almost invisibly taken for granted. My first reaction to sayings like this is not to the substance,

Miller, of course knows a little about control processes, but like most others who do, he relegates them to homeostatic systems; p. 448, title of section 5.2: “Adjustment processes among subsystems or components, used in maintaining variables in steady states.” The idea of controlling through varying a reference signal has never occurred to him, or if it has, he hasn't seen what it means.

Looking higher on page 448 I see “...when different messages arrive at the two eyes or ears simultaneously, a number of factors influence a person's ability to respond appropriately to them...”. The embedding paragraph isn't even about S{timulus}-R{esponse} theory—that's assumed without defense. It's concerned with information theory and the peculiar idea that “messages” are always clamoring to get into the brain which has to filter out what it can use to avoid being overwhelmed. The tricky term “appropriately” isn't explored at all—just lucky for the organism, I guess.

And so it goes, sentence after sentence, paragraph after paragraph, page after page, book after book. The life sciences are in the grip of a wrong model of behavior, a model that has never been tested, a model that is based on blind faith in a few basic assumptions that aren't even recognized as being testable theoretical assumptions. I don't care how many guesses agree with my conclusions if the basis for them is simply wrong, or worse, non-existent. That doesn't make me right, of course, but why pursue what we know is wrong?

In school, I was always the guy who raised his hand during the introductory lecture. If I can't swallow the basis for an argument, I just can't see any point in hearing the whole tedious thing worked out. I am as certain as I can be that Miller's fundamental assumptions about the very nature of organisms are false to fact. I'm willing to stipulate that his logic is impeccable—but so what? Garbage in, garbage out. Sorry.

I'm sure this testy essay hasn't convinced you of the vacuity of Miller's book, but we'll get back to that sort of thing, without doubt. If I know you, you'll call my bluff.

<snip, other subjects>

Best, Bill