

A REVIEW OF JOHNSTON AND PENNYPACKER'S
STRATEGIES AND TACTICS OF
HUMAN BEHAVIORAL RESEARCH

BETH SULZER-AZAROFF

UNIVERSITY OF MASSACHUSETTS

[JABA occasionally invites reviews of books judged by the Editor to be important. The purpose of these reviews is not to announce or describe books, but to evaluate their contribution to the field. Hence, these reviews are often longer, and appear later, than other reviews. We are fortunate to have a leading behavior analyst, Beth Sulzer-Azaroff, provide this review. Her comments follow.—Ed.]

As a reader intrigued by Johnston and Pennypacker's text you are probably interested in enhancing your skill as a researcher, increasing your ability to contribute to the pool of knowledge about human behavior. But studying human behavior is a complicated thing to do, especially when the real world is the laboratory, as in applied behavior analysis. Human beings live in highly complex settings and are beset constantly by a myriad of events. Trying to capture behavioral episodes is like trying to grasp greased lightning. Attempting to match specific acts with events that influence lawfully their function is even more challenging. Of the myriad of stimuli bombarding the individual, some impact, to greater or lesser degrees; others do not. Your task as a scientist whose aim is to study human behavior is to sort out the tangle.

This is no small challenge. To paraphrase a statement by my friend and colleague Ellie Reese, "If it is difficult to conduct successful research in the scientific laboratory, where so many factors can be managed, think how much more difficult it is when the field is the laboratory; and think how much greater is the accomplishment when discoveries are made."

Let us assume you work hard, meet challenges

successfully, are able to see subtle relationships and draw conclusions from them. Now suppose you were sent on a mission to outer space to visit a technologically advanced colony of social creatures not too dissimilar from humans. Your job, like that of the scientific psychologist on earth, is to find out what makes them tick. But you have not had any formal training as a behavioral researcher. What would you do?

You could just watch and describe what you see, but that wouldn't explain what controlled the behavior.

You could interpret what you see by referring to your own inner workings, attributing causality to factors analogous to those based in your own personal and cultural history, but you could be wrong. Or right. Either way, you would not be able to put your assumptions to the test, as they are not amenable to objective verification.

You could try to communicate with your subjects and ask them why they do the things they do. They could be accurate in their attributions of causality, but if they do resemble humans behaviorally, those attributions of causality often would be distorted, oversimplified, or downright wrong.

You could consult a handy-dandy cookbook and follow the recipes. You might find that approach very satisfying because it will tell you how to conduct your studies. The guide might cause you to bunch your observations about the creatures and to conclude something about them in general: "They tend to be active about three times as much as they are inactive" or you might poke around with things you suspect are affecting them and see if those things do produce what you

observed. "When I augment the lighting conditions, their activity levels change."

But in the first instance, you will have discovered little about individual members of the group or how their behavior is controlled, and in the latter, your discoveries will be restricted unless you move beyond the recipes in the cook book. You will not be able to improve your search strategies for discovering subtler influences on behavior, unless you have available more general tactics and strategies to adapt to your objectives.

That was Johnston and Pennypacker's objective in preparing their text on *Strategies and Tactics of Human Behavioral Research*;

... to facilitate a thorough and integrated understanding of behavioral research methods at strategic and tactical levels so that the experimenter is in an informed and flexible position to design procedures that are ideally suited to particular experimental circumstances and that will also yield reliable and general statements about human behavior. (p. xiii)

As you begin to study strategies for investigating the behavior of organisms, you are struck by the fact that the strategies themselves are not grounded in fundamental laws of nature. Rather, much as one would have to extrapolate from promising methods of the past when planning to explore uncharted territory, they are verbal devices—rules, philosophies—designed to govern your conduct as you attempt to extract generalities from the complex confusion that epitomizes human behavior. Ultimately, these should help you and your fellow researchers to design and implement your studies and ultimately to sell people on the reliability and importance of your findings.

That you are dealing with a subject matter that is inexact can be a useful realization, for it causes you to recognize that any conclusions you draw must be tentative, always open to elucidation, modification, or rejection. It also tells you to be judicious about your selection of research

strategies, to seek out those that will permit your conclusions to convince the most skeptical—particularly yourself.

Because they are extensions founded on opinion, not fact, any set of strategies is going to be acceptable to a greater or lesser degree, depending on the reader's own background and perspectives. Those of us already sold on radical behaviorism will find Johnston and Pennypacker's recommended strategies broadly acceptable. Heartily we shall embrace the suggested guidelines for repeatedly observing and recording behavior objectively and reliably under different conditions of the independent variable, the value of measuring and explaining variability by designing methods of control, and the fundamental role played by replication, direct and systematic. The reader not fully committed to our behavior analytic perspective may also be attracted to many of those notions.

Other of the strategies advocated by the authors we shall find not to our liking. Some of us, for instance, may take issue with their approach toward identifying trends, how best to draw conclusions from findings, whether or not inferential statistics can contribute to interpretations and so on. My own marginal notes, although heavily affirmative, occasionally indicate disagreement. Yours might too. Perhaps our positions are more tenable, and our alternative approaches will lead us closer to the truth. Maybe the authors' viewpoint had merit but they failed to convince us. Their salesmanship slipped. The point is that, as with most philosophical works, we shall find ourselves agreeing in some places, disagreeing in others; and this is as it should be.

One thing that does concern me about this text is its occasionally polemical stance. As with the door to door merchant who, by applying an especially hard sell, alienates his potential customers from trying *any* of his products, too energetic an argument may turn away possible users of intensive behavioral research strategies. The role of inferential statistics is a case in point here. Although the authors do assemble a series

of arguments that probably would prove convincing to many, their overzealousness on the point could alienate their fellow behavioral and mainstream psychological research colleagues. Perhaps a more palatable approach would have been to present their arguments firmly but gently, possibly as rhetorical questions.

Additionally, there is another side to the coin regarding the argument on the value of cookbooks. That is that proffered general tactics and strategies are abstract guidelines, not specific techniques. They will not tell us exactly what to do in a given instance. For many of us, this is problematic, as we have not learned adequately to proceed from the general to the specific instance. Also abstractions can make us uncomfortable because they fail to provide examples against which we can compare our own tactics. For those of us whose history has taught us to follow precise rules, such circumstance can be demoralizing. For many it would be like attempting to translate the Golden Rule into guidelines for each moment to moment action throughout our waking lives. Were it not necessary to suggest ways of dealing with the specific case, no more texts on the topic of scientific inquiry would have been needed. Sidman's monumental achievement, *Tactics of Scientific Research* (1960) would have done it all.

Johnston and Pennypacker's text does have value for just that reason. By liberally incorporating human examples to illustrate their points, they will undoubtedly reach a broader audience. Sidman convinces his readers in relatively abstract fashion of the critical importance of systematic replication to the development of a science of the behavior. Johnston and Pennypacker show just how this is accomplished by describing the evolution of research on time-out.

In their "adamant . . . conviction regarding the inappropriateness of such simplistic treatments (i.e., methodological cookbooks) of behavioral research methods for any student or researcher" (p. xii), the authors ignore some important principles of behavior, principles they exquisitely apply to some of their own research.

I am referring to the progression of steps trainers follow in helping to bring subjects' behavior under the control of critical discriminative stimuli, as in learning to distinguish lumps of tissue from one another for the purpose of detecting early warning signs of breast cancer. Training progresses from the most readily discernible differences to the most subtle, starting from the entering repertoire of their subjects and leading them toward the ultimate objective. So too is this the case with shaping, as when a talented teacher starts with the initial repertoire of the learner and guides the person in successive steps toward the ultimate goal.

When attempting to teach abstract strategies to apply in the conduct of research, one must also begin by matching textual material to the readers' repertoires. In most cases this means starting with the familiar and specific, showing how the research is conducted by supplying many examples and guidelines. This can resemble a cookbook approach. But then those prompts should be gradually faded, as control shifts slowly over to the broader general strategical principles. The shift is justified to the student on the grounds that strategies of research must be flexible enough to accommodate to novel circumstances.

That this reviewer is not the only one who recognizes how important it is to reach students by adjusting to their current repertoires, presenting them with examples, and guiding them to practice using the concepts, is evidenced by the number of sets of study guides and quiz materials already prepared for the Johnston and Pennypacker text. Besides one prepared by Eleanor Criswell at Gainesville, and Dan Hursh and Jack Keenan at West Virginia University, Ben Handen and I have developed our own for use at the University of Massachusetts Mastery Learning Center. Our students, as do most, acquire abstract concepts best when going from the specific and structured to the general.

We like the Johnston and Pennypacker text and assign it as required reading. We feel it performs exceedingly well its purported function of

teaching behavioral researchers to enhance their competence. But before exposing them to this text, we start them out at the cookbook level, explaining in advance the values and limitations of each. The progression is comfortable and apparently successful.

REFERENCE

Sidman, M. *Tactics of Scientific Research*. New York: Basic Books, 1960.

Received June 21, 1983

Final acceptance June 23, 1983