Tactics of Scientific Research and Organizational Behavior Analysis

William K. Redmon
Western Michigan University

When I first sat down to write this commentary, I searched the shelves for *Tactics* and found it missing. Unfortunately, this was a familiar situation. I had “lost” three copies of the book prior to this one—mostly to enthusiastic students and colleagues who borrowed it for extended periods. So, I walked down the hall to the office of one of my colleagues and asked to borrow his copy. He searched for a few minutes and came up with a dog-eared, water-stained version and handed it over. He related a story about how the book had survived a lab fire and subsequent soaking, mistreatment by family pets, etc. Others relate similar stories; stories which attest to the durability of *Tactics* and serve as a testimonial to its popularity 30 years after its original publication.

The durability of *Tactics* is supported by more dependable measures as well. My work emphasizes industrial/organizational applications. Thus, I decided to collect citation data to assess the influence of *Tactics* in behavioral organizational psychology. I must add that I used the approach recommended by Sidman in gathering data. I set up a method of measurement, obtained repeated measures and withheld my judgment until I could be affected by the data.

I focused my search on the four most recent volumes of the *Journal of Organizational Behavior Management (JOBM)*, the journal in which most of the papers in my field are published. The most recent citation appeared in the 10th anniversary issue of the *JOBM* in which the Editor announced the inclusion, for the first time, of operant laboratory studies based on organizational analogues. Reference to *Tactics* also appeared in three other papers published in the same issue of *JOBM*. In these citations Sidman’s classic work was used as the basis for a description of the methodology of the Experimental Analysis of Behavior (EAB)

and as a standard to which readers could refer for the criteria for EAB research.

Based on my review of the 10th anniversary issue, I was surprised. I initially thought that I might find one reference, mainly because it was an anniversary issue which addressed historical issues in the field (behavior analytic roots). My interest was stimulated. I extended my search to other volumes of *JOBM*. Surely, the citations would not be numerous, I presumed. I was surprised again. In *JOBM* Volume 9, Number 2, which was published just prior to the 10th anniversary issue, two papers cited *Tactics*. Both of these addressed the issue of systematic replication and the need for data from repeated experiments in establishing a strong methodological base in the field.

Volume 9, Number 1 of *JOBM* was a special issue on quality control and statistical process control in manufacturing. Surely, *Tactics* could not be cited here in an issue devoted to statistical measurement. I was right. One can predict some things after all. My review extended to Volumes 7 and 8 where I found one citation in each. There, I concluded my search convinced that the book plays a current role in organizational behavior analysis and not just one of remote historical guidance.

The citations mentioned above only hint at the nature of the contribution of Sidman’s now famous text to organizational behavior analysis. I talked with colleagues, added a few of my own thoughts and constructed the comments below to describe more precisely how its influences may have been manifested. I will summarize my points in terms of two major factors: (1) science as a process, and (2) the role of scientist as person.

Science as Process

With respect to the first point, Sidman talked of science as a series of events and

not as isolated experiments or studies. He emphasized replication as the major tool of the scientist and focused not on experimental designs, but on a well-coordinated set of events which produces more or less believable conclusions. In this regard, Sidman maintained that "neither the practice of experimentation nor the evaluation of its products can be bounded by any specific rules—a qualification that lends a certain note of irony to any book on experimental methodology" (p. vi). In a later chapter, Sidman indicated "the objectivity of science consists not so much in set rules of procedure as in the self-corrective nature of the scientific process" (p. 43).

Thus, *Tactics* was not written to create the rule-bound scientist who has a ready answer for all occasions, but it was designed to facilitate the discovery of causal relations whether for science or cure or both. In this sense, it is clear how the book has been and will be important to behavior analysts working in organizations. It serves as a guide for posing questions and answering them in ways that provide believable outcomes given a set of circumstances. This is exactly what is called for in a developing science which must adapt to the demands of businesses, schools, hospitals and other settings that cannot be "arranged" in an exact order. We must obtain the most reliable data possible under realistic circumstances and replicate research as best we can to build a base for subsequent extensions. When one moves from one large organization to another or from one department to another, literally thousands of conditions change (e.g., compensation, immediate surroundings, employee history with supervisors, etc.). Under such circumstances, precise replication can rarely be achieved. Verification of effects through replication may require hundreds of attempts before a pattern of believability emerges. Patterns emerge over years and not weeks or months.

Personal Contribution of the Experimenter

The second point involves the personal contribution of the experimenter to sci-

entific findings. Sidman emphasized this issue in the Preface of *Tactics* when he wrote:

The pursuit of science is an intensely personal affair. Experimenters cannot always tell us how or why they do what they do, and the fact that their conclusions are sound so much of the time remains a puzzle even to the many philosophers, logicians, and scientists who have devoted a major portion of their time and effort to this problem. (p. vi)

Throughout the book, Sidman emphasized the role of the *experimenter as a person* in producing data and more general conclusions. He considered the experimenter's beliefs, experiences and relationships with colleagues a part of the scientific process along with data collection and analysis. In Sidman's view, the experimenter is truly embedded within the contingencies that produce scientific evidence and is not outside these bounds as many books on methodology imply. Sidman pointed out,

Even the personality and character of the experimenter will be taken into consideration by his colleagues and peers. For example, a man may reveal, in casual conversation, an inordinate ambition for political success within his profession, or serious deficiencies in his personal ethical standards. In which case, his scientific products are likely to be regarded as outgrowths of his extrascientific activities and therefore as requiring an even greater amount of validation than usual. (p. 75)

At another point, Sidman discussed systematic replication and pointed out that "if the psychologist's experience has given him confidence in his techniques, he will choose systematic rather than direct replication as a tool for establishing reliability" (p. 111). In the same section, Sidman contended that

an experimenter who has developed a "feel" for a particular area of research will often deliberately fail to control certain variables. If, for example, he is performing an experiment with lower animals, he may permit his subjects to differ with respect to food deprivation, previous history, age, duration of experimental sessions, and additional variables which may have proven relevant in other contexts. If, in spite of these differences, he obtains similar orderliness from each of his subjects, he will have achieved a successful more generalizable replication than would otherwise have been possible. (p. 111)

This approach is particularly appropriate to Organizational Behavior Anal-

ysis where the experimenters are often involved in an extensive social and political system which may affect their decisions or methods of implementation. In such cases, the scientist is often a person who has acquired an extensive history in that setting and who implements interventions in unique ways. Consideration of this feature allows us to examine directly the role of the experimenter in producing the results and provides a basis for consideration of the contingencies that affect choices by experimenters as a major factor in the outcomes of research studies. Sidman's perspective is both realistic and adaptive, especially in situations where personal variables are likely to exert major influences.

Organizational Behavior Analysis is a

science in its own right in that it attempts to discover new causal relations and emphasizes meaningful problem solving. Furthermore, this science takes place in settings which are notoriously difficult to control (in experimental terms). To maintain scientific standards and solve problems is a challenge which demands flexibility in methodology and measurement. For the reasons described above and many others, Sidman's book provides a realistic and useful model for this endeavor thirty years after its original publication. We are indeed grateful.

REFERENCE

- Sidman, M. (1960). *Tactics of scientific research: Evaluating experimental data in psychology*. New York: Basic Books.