THEORETICAL WEAKNESS IN BEHAVIOR THEORY IS NO MORE THAN STATISTICAL VARIANCE: A RESPONSE TO CHRISTINA LEE

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Behavior therapists have defined their discipline as the empirical investigation of issues circumscribing clinical assessment and treatment. Despite the rigor and success of this discipline, few practicing clinicians have endorsed the behavioral approach. "Theoretical precision may be viewed as a luxury that the busy psychologist cannot afford" (Lee, 1989, p. 115). Lee responds that wedding scientific verifiability to clinical theory is not the luxury of clinical investigators alone. Rather, scientifically valid theories have significant implications for practice; theories that do not attain a semblance of empirical validity may mislead clinicians and thereby provide a significant disservice. Lee uses Bandura's Self-Efficacy Theory as a vehicle to demonstrate her argument.

This argument in part recapitulates a recurrent epistemological concern in behavior therapy: Should the constructs of a behavioral science be directly and wholly observable? When first setting down fundamental rules of his behavioral science, Skinner (1953) argued that the domain of phenomena should be limited to observables alone. Use of unobservable constructs (e.g., personality traits, private experience that might be recalled through introspection) decreased the subsequent precision, reliability, and validity of psychology. Skinner argued for an entirely inductive science, in which explanatory statements about human behavior arose from associations drawn from the observations of experimental subjects. Skinner believed the a priori hypotheses of a more deductive science would blind investigators. In hypothetico-deductive investigations, experimenters strive to fill out the logical demands of theory rather than discover the natural associations among behavioral phenomena.

In her paper, Lee seems to be critiquing Bandura's self-efficacy theory using many of Skinner's concerns. Specifically, she questioned whether self-efficacy expectations can be precisely defined and reliably measured because the theory rests in large part on unobservable constructs. Moreover, while Lee acknowledged that self-efficacy describes behavior well, she criticized the approach as presenting a limited explanatory model. Four variables account for the development of efficacy expectations: previous experience, verbal input, some physiological states, and expectations gained vicariously from observations of others. Lee states that no adequate model explains the manner in which the variables interact and produce efficacy expectations. Without this model, practitioners cannot form reliable intervention strategies that diminish barriers to self-efficacy or facilitate efficacy expectations. Without scientific precision and theoretical rigor, Lee argues that adherents of self-efficacy cannot generate clinical methods that will predictably have an impact upon patients.

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Behavior therapy has changed dramatically since Skinner's first discussion on the methods of the discipline. With Bandura's (1971) seminal work on vicarious learning, unobservable constructs have been reintroduced into the scientific agenda. In his early studies, Bandura demonstrated that individuals can acquire behavioral skills by observing a model and perform these skills some time later. These findings significantly challenged the operant viewpoint that learning occurs only after a performed behavior is reinforced. Bandura's results only make sense if individuals have some unseen place (i.e., cognitive black box) in which behavioral information is stored and from which this information can later be retrieved. Additional research has shown that information processing and cognitive schema models adequately explain the operations of this black box and are relevant for clinical practice (Argyle, 1986; Ingram, 1986; Wallace, 1982). Moreover, these investigations have met Lee's criteria for good science; namely, theoretical formulations that are explanatory, precise, and practical.

Lee's assertions regarding the impossibility of formulating an empirically valid model describing the interaction of precursor variables that produce efficacy expectations overlooks the recent revolution in behavior therapy. Studies using log linear or stepwise regression analyses may provide a probabilistic model for explaining this interaction. For example, self-efficacy may be a simple arithmetic combination of the four precursor variables noted above. Subsequent clinical studies can test interventions aimed at specific components of the regression model to determine whether efficacy can be enhanced with these interventions. Does a role model saying efficacy statements aloud as he/she completes a social skill task improve the observing patient's efficacy expectations in future interpersonal situations? Although these models are limited by the statistical quality of their explanations, since Heisenberg, scientists of most disciplines (e.g., physical chemistry, statistical mechanics, particle physics) realize that a probabilistic epistemology is necessary. Hence, despite the apparent limitations of a statistical design using unobserved constructs, especially compared to the elegance of many of Skinner's single case investigations, behavioral scientists can not retreat from statistical analyses. Many human behaviors can only be explained by trying to measure inferred cognitive processes. Lee mistakes theoretical weaknesses for statistical variance and practical problems for the subsequent probability that results in statistically based behavioral models.

Despite these shortfalls, Lee is reminding behavior therapists of their empirical roots and encouraging us not to be seduced by overtheorizing. "The view that scientific basis of a theory is irrelevant to practical usefulness cannot be sustained" (Lee, 1989, p. 116). Perhaps the greatest weakness in Bandura's theory (and in many behavior theories) is not the theoretical statements that directly arose from the empirical investigations, but the subsequent bastardizations that occur when the theory is separated from its empirical roots.

References


