Reconsidering the Primacy of Cognition:
A Review of Christina Lee's *Alternatives to
Cognition: A New Look at
Explaining Human Social Behavior*

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Time changes everything, it seems. Governments fall, cultural icons come and go, and scientific paradigms, once believed to epitomize wisdom and intellectual progress, become tarnished and vulnerable under increased scrutiny. Such is the fate of the cognitive revolution, according to Christina Lee. In *Alternatives to Cognition*, Lee argues compellingly that the predominant metatheory of modern psychology has run its course, leaving little of substance in its wake. Her central thesis, that cognition seldom plays a causal role in behavior, will sound familiar to behavior analysts while offending many in the psychological mainstream.

The shortcomings of cognitive science cut right to the core, reasons Lee. Fundamental assumptions that have historically fueled cognitive models have never been questioned or seriously evaluated, perhaps because they are largely consistent with lay conceptualizations of behavior. Long before any of us becomes socialized into the discipline of psychology, we learn to speak about the conveniently private machinations that precede and presumably cause overt action. Such assumptions, however, are ineffectual groundwork for a science, and Lee's book is a powerful reminder of the importance of skepticism, particularly when ad-

ressing a subject matter so familiar and apparently intuitive.

For the most part, Lee's assault on the cognitive revolution steers clear of conceptual and philosophical arguments. Instead, she marshals an overwhelming collection of empirical findings, most culled from social and cognitive psychology, that identify cognitive factors as neither necessary nor sufficient to explanations of behavioral events. The force of Lee's argument is augmented by the fact that her own empirical work has been conducted within the cognitive domain. Thus, cognitive scientists would do well to heed her misgivings. Her research on self-efficacy would eventually cast serious doubt on the causal status of this most revered construct (Lee, 1987, 1993), leading, ultimately, to a general examination of cognition, affect, and attitude as explanatory psychological principles. The intent of her book is nothing less than the debunking of psychology's grandest, and most enduring, myth.

Lee ranges far and wide to procure the evidence needed to meet her rather lofty goal. Her beginning point, not surprisingly, is the familiar territory of self-efficacy, both as a theoretical construct and as a target of intervention in cognitive behavior therapy. What she discovers is a construct bereft of conceptual meaning, inseparable from the behavior it is meant to explain, and less than robust in accounting for change in clinically relevant behavior. Even when combined with additional constructs of an equally hypothetical nature, self-efficacy is observed to account for minuscule proportions of variance that one

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might expect to obtain by choosing any predictor variable at random. In sum, Lee charges the cognitive-behavioral community with granting the self-efficacy construct an explanatory potency it simply does not possess.

With equal aplomb, Lee mines the social psychological literature, particularly recent findings in the physiology of emotion. A growing literature, for instance, argues against the intuitive notion that facial expressions are merely outward manifestations of internal affective states. Instead, flexion of facial muscles may be among the primary stimulations used by each of us to evaluate our emotional state. This is even the case when muscle tension is produced artificially by experimental manipulation (Duclos et al., 1989; Laird, 1974; Strack, Martin, & Stepper, 1988). Similar research demonstrates that externally imposed bodily posture also induces particular affective interpretations. Thus, rather than serving a primarily initiating role, emotional states can just as easily be interpreted as responses to previously emitted behavior and stimulation.

These contemporary empirical findings lend further support to the unorthodox claim that attitudes are shaped and altered through observations of our own behavior, as suggested by both Bem (1972) and Festinger (1957). In fact, a considerable part of social psychology's history has been devoted to understanding the complicated, often reciprocal, relationship between thought and behavior. Festinger's theory of cognitive dissonance, which generated perhaps more empirical activity than any psychological theory during the 1950s and 1960s, specifically addressed our overwhelming penchant for altering thought to match preceding behavior. The theory posits an iterative causality between one's overt actions and the private machinery of cognition and self-perception, rather than a simple linear causality with thought as the necessary antecedent.

Naturally, one meets considerable resistance when challenging the intuiti-

ve claim that cognition drives behavior. Inveterate cognitivists, Lee suggests, can avail themselves of some creative escape clauses, particularly when prebehavioral thoughts and perceptions are conspicuously absent. One can, for instance, simply argue that much behavior is brought about by unconscious cognition, which is, by its very nature, unavailable for independent analysis. Such an argument is unassailable simply because there could be no restrictions placed on the kinds of unconscious thoughts and perceptions to which behavior could, in post hoc fashion, be attributed. Theories of unconscious cognition are promoted, Lee suggests, because the alternative, that behavior often occurs in the absence of any meaningful mentation, is simply unimaginable to many in the psychological community. Better to intimate a secretive, inaccessible process than no process at all!

The primary shortcoming of Lee's analysis is its lack of comprehensiveness. In actuality, the case against cognition as governing agent emerges from a larger and more diverse collection of psychological research programs than alluded to in *Alternatives*. There has long been ample documentation, for instance, of behavior that occurs in the apparent absence of cognition or awareness of any kind. This is particularly true of automatic behaviors, actions that have long since been mastered and occur with considerable frequency (Bruner, 1992; Shiffrin & Schneider, 1977). Even topographically complex activities, such as driving a car in busy traffic, though obviously under effective stimulus control, require minimal conscious attention once mastered. More recently, unconscious information processing has been studied under the banner of implicit memory, and is believed to be a pervasive feature of human adaptation (Reber, 1993; Schacter, 1987).

In addition, recent work in evolutionary psychology poses its own unique challenges to cognitive psychology. Most proponents of this per-

spective view the mind as consisting of separate modules, each having evolved to solve particular adaptive problems during early human history (Buss, 1995, 1997; Cosmides & Tooby, 1987; Simpson & Kenrick, 1997). Evolutionary psychologists contend that specific cognitive processes would have to operate on task-relevant stimuli in order to negotiate the primarily social world of kin recognition, interpersonal attraction, mate selection, and parenting. The basic parameters within which these information-processing modules operate would have to have been selected for phylogenetically; thus, they would be expected to undergo little modification during the lifetime of the individual. The "relevance" of social information is largely the result of temporally remote contingencies, and would thus not require awareness on the individual's part. The complicated calculus of recognizing biological relatives, keeping track of the costs and benefits of interpersonal exchanges, and evaluating the fitness of prospective mates can all proceed quite effectively without the benefit of introspection. It is important that biological organisms make sufficient contact with their physical environment; it is less so that they make similar contact with the internal workings by which they do so. Indeed, as Skinner (1974) frequently observed, the individual "does not make contact with that vast nervous system which mediates his behavior. He does not because he has no nerves going to the right places" (p. 216).

That people misidentify or fail to identify information relevant to their own behavior is a well-established fact in psychology. Within cognitive psychology, particularly the study of problem solving, protocol analysis has become a standard data-collection strategy (Ericsson & Simon, 1984). Protocol analysis entails participants describing, usually during an experimental task, their ongoing behavior and their reasons for making particular decisions or choosing specific behavioral options. The procedure is not without its prob-

lems. Unfortunately, research participants often encounter difficulty describing independent variables objectively associated with their behavior, even when such reports occur immediately following participation (Nisbett & Wilson, 1977). Given this state of affairs, one wonders what kind of confidence can be placed in instruments that are designed to assess subjects' awareness of their own behavior, much less its putative causes.

As stated previously, Lee's primary arguments are largely empirical ones. How much stronger might the book have been had the author pursued further the conceptual confusion surrounding much cognitive theorizing? Although she makes some obligatory nods in the direction of Skinner's work, Lee does little more than scratch the surface of a sophisticated epistemological literature. Here her argument could have benefited immensely from Skinner's copious treatment of private events and the collateral nature of private and public activity (Skinner, 1945, 1953, 1974) as well as additional behavior-analytic treatments of the same (e.g., Deitz, 1986; Hayes & Brownstein, 1986; Moore, 1980, 1981; Schnaitter, 1986). Also, Ryle's (1949) discussion of the "ghost in the machine" and the paramechanical hypothesis could have significantly augmented the present account. Had Lee made contact with this rich literature, or with recent developments in implicit learning or evolutionary psychology, she may have discovered that the alternatives to which her book's title refers are even more numerous than imagined. Nevertheless, *Alternatives to Cognition*, emerging from an unlikely source, is a most timely wake-up call for those who would invoke cognition as a default explanatory device.

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