

## The Law of Cognitive Structure Activation: New Directions in Understanding Depression and Psychotherapy

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It is refreshing to find interest and dedication in the formulation of general laws of human behavior at a time when psychological research has become highly specialized. Sedikides and Skowronski's article is timely in bringing to light a potential common ground for understanding research findings in cognitive, social, and clinical psychology. Their interpretations of past research findings in terms of the principle of cognitive structure activation seem well-founded and their speculations regarding its implications are reasonable. Obviously, attempting to establish such breadth in the applicability of the principle necessarily limits the amount of depth with which any one application can be pursued. If psychology is to benefit from the formulation of general principles, however, it is important that these principles do more than simply explain a wide variety of past empirical findings. Such principles should also offer us greater depth in our understanding of a given phenomenon and new paths for investigation.

One critical question is whether the law of cognitive structure activation offers a more complete understanding of depression and psychotherapy and new avenues for empirical investigation. Sedikides and Skowronski point to the usefulness of the cognitive-structure-activation hypothesis in explaining the intrusive and uncontrollable nature of depressive thought, as represented in the recent work of Bargh and Tota (1988) and Moretti and Shaw (1989). They also suggest that the principle of cognitive structure activation is central to understanding the efficacy of psychotherapy. I agree with Sedikides and Skowronski's position on the usefulness of the principle of cognitive structure activation for furthering our understanding in this area, although I disagree with some of their statements regarding the implications of this principle for psychotherapy. The following discussion extends their analysis and presents some alternative positions regarding the applicability of the principle for understanding depression and psychotherapy.

### Extending the Cognitive Model of Depression

#### The Development of Vulnerability to Depression

A fundamental criticism of the cognitive model of depression is that it provides a relatively weak theoretical basis for understanding the development of vulnerability to depression. According to Beck (1967, 1976), vulnerability to depression results from the development of pathogenic cognitive structures or schemata about the self, the world, and the future that develop early in life in response to acutely stressful experiences such as loss or rejection. The early development of these structures is critical because once established they influence subsequent processing of informa-

tion with regard to the self. Beck (1967, 1976) has not substantially elaborated on this basic model, perhaps because the focus of cognitive therapy is on the present status of the individual's functioning rather than on the antecedents of the condition.

Our understanding of the principle of cognitive structure activation in conjunction with advances in our understanding of cognitive development during infancy through to adulthood provide a good foundation for understanding the development of pathological cognitive structures. Research on cognitive structure activation indicates that information that is presented frequently, consistently, clearly, and significantly results in the development of highly accessible constructs (Higgins, 1989b; Higgins, Bargh, & Lombardi, 1985; Higgins & King, 1981).

Developmental shifts in mental representational capacity have been well documented by researchers (Case, 1985). Shifts in children's capacity to cognitively represent the relation between events may be related to developmental shifts in cognitive representations of the self (Higgins, 1989a; Moretti & Higgins, 1990). For example, infants are unable to cognitively differentiate themselves from others and therefore are incapable of distinguishing between events related to the self and those that are not (Case, 1985; Kagan, 1984). In contrast, a 2-year-old has the capacity for symbolic representation and can consider the relation between his or her behavior (self-as-object) and the reaction of another individual to this behavior (other-as-object; Case, 1985). Various experiences will, therefore, have differing effects on the developing self-concept in children at these two levels of cognitive development.

When we combine our understanding of the factors that contribute to construct accessibility with our understanding of cognitive development, we can make specific predictions concerning the impact of exposure to self-related information on the development of self-representation. A general prediction is that exposure to negative self-related information frequently, consistently, clearly, and significantly during childhood will result in the development of highly accessible negative self-constructs and therefore heightened vulnerability to depression. A more specific prediction is that exposure to negative self-related information frequently, consistently, clearly, and significantly during infancy will have a different impact on the formation of pathological elements of self-representation than the presentation of the same information in early childhood when the critical foundations of a cognitive representation of the self may be formed.

In summary, our understanding of cognitive structure activation and cognitive development provides the basis for specific formulations and predictions concerning the development of vulnerability to depression. It is hoped that models such as that offered by Moretti and Higgins (1990) will lead to a more complete understanding of the development of vulnerability to depression.

### Assessing Vulnerability to Depression

Beck (1967, 1976) proposed that, once formed, dysfunctional schemata about the self, the world, and the future may lie dormant until activated by stressful experiences in adulthood. Remission from depression may simply mark the point at which dysfunctional schemata become dormant. In both cases, latent dysfunctional schemata about the self, the world, and the future represent vulnerability markers for first-episode depression or relapse into depression.

Many critics of cognitive theories of depression have argued that the information-processing features of depression are simply correlates of the disorder which disappear when the disorder remits. This concern was initially voiced by Coyne and Gotlib (1983), based on their review of the literature, and more recently reiterated by Barnett and Gotlib (1988). If cognitive features of depression, such as intrusive negative thoughts, simply co-occur with the disorder and are not present prior to or following the depressive episode, they are of limited importance in understanding the etiology and recurrent course of the illness. Yet, if we adopt the cognitive model of depression, it is reasonable to expect that some information-processing features of depression will disappear with remission because pathological cognitive structures become latent and inactive. If the cognitive model of depression is valid, researchers should be able to demonstrate the existence of latent dysfunctional cognitive structures in individuals who are vulnerable to depression or relapse into depression. To date, research has failed to provide such evidence (Barnett & Gotlib, 1988).

The principle of cognitive structure activation provides a basis for developing new methodologies to evaluate the hypothesis that latent dysfunctional cognitive structures increase vulnerability to depression. By utilizing priming manipulations we can activate supposedly latent dysfunctional constructs and evaluate the effect of their heightened accessibility on information processing (see Higgins, 1989b, for a discussion of priming effects). One would predict that the priming of latent dysfunctional cognitive structures in remitted depressives should produce information-processing characteristics typically seen in depression. The application of the principle of cognitive structure activation, then, allows us to move concepts that have been central in our theories of depression into a realm where they are very open to empirical evaluation.

#### Understanding the Intrusive and Persistent Nature of Depressive Information-Processing

The principle of cognitive structure activation may also explain the intrusive and persistent nature of depressive information-processing. Research indicates that subjects need not be aware of a construct that they hold or of the priming of the construct in order for it to influence information processing (Bargh, Bond, Lombardi, & Tota, 1986; Bargh & Pietromonaco, 1982). These findings suggest that it is very likely that depressed individuals are unaware of the dysfunctional constructs that they hold, or of the types of situations that prime the accessibility of these constructs. If this is the case, depressives should experience their negative thoughts as intrusive and unpredictable. This is indeed supported by clinical observations indicating that depressed individuals

often complain that their negative thoughts have a life of their own—they intrude without warning and persist despite attempts to banish them from awareness.

Research has also indicated that the influence of highly accessible constructs on information processing is extremely difficult to inhibit, particularly when attentional resources are limited (Bargh, 1984; Bargh & Pratto, 1986; Logan, 1985; Uleman, 1987). In fact, instructions to inhibit or suppress thoughts that result from the activation of constructs may actually increase the frequency of these not-to-be-thought-about thoughts (Fennell & Teasdale, 1984; Wegner & Schneider, 1989; Wegner, Schneider, Carter, & White, 1987). These findings may help to explain why the capacity of depressives for controlling their negative thought processes appears to be reduced when they are confronted with situations that impinge on attentional resources.

Moretti and Shaw (1989) suggested that attentional resources are likely to be taxed in situations that are affectively charged and/or highly complex. The heightened level of physiological arousal associated with affect may impinge on attentional resources (Kim & Baron, 1988) and increase the accessibility of similarly valenced constructs (Higgins & King, 1981; Isen, 1984; Johnson & Tversky, 1983). In highly complex situations, individuals must attend to a multitude of factors, thereby reducing available attentional resources. Demands on limited attentional resources will increase the likelihood that information will be processed automatically and will decrease the likelihood that individuals will be able to interrupt or inhibit these processes. Thus, a reasonable prediction is that depressives are more likely to manifest dysfunctional information processing in situations that are affectively charged and/or highly complex.

Sedikides and Skowronski offer passing comments on the applicability of the law of cognitive structure activation for understanding other types of psychological disorders such as obsessive-compulsive disorder and problems of loneliness. Although I agree that this principle may indeed have much to offer in these domains, the applicability of this principle in each of these areas should be carefully thought through before such claims are made. In the past, psychopathology researchers have been too quick to adopt new concepts, such as the schema concept, that superficially offered new perspectives but later proved less productive (Segal, 1988; Spielman & Bargh, 1990).

#### Conceptualizing Psychotherapy From a Construct-Accessibility Perspective

Our understanding of the development and operation of cognitive structures suggests that several therapeutic strategies may be helpful in altering cognitive structure operation. First, as we have noted the existence and influence of cognitive structures on information processing occurs largely without awareness. An obvious first step in the therapeutic change process is to help patients become aware of self-relevant constructs and their effect on information processing. This process can often be facilitated by asking patients to carefully monitor changes in their feelings states, and use these changes as cues to examine thought processes that may be occurring outside of immediate awareness (Moretti, Feldman, & Shaw, 1990; Moretti & Shaw, 1989).

The identification of dysfunctional cognitive processes can be therapeutic in and of itself; however, most patients

require further assistance in altering dysfunctional patterns of knowledge accessibility. Moretti, Higgins, and Feldman (1990) outlined several methods for altering cognitive-structure representation and operation. These include (a) changing patterns of construct availability and (b) changing patterns of construct accessibility.

### Changing Patterns of Construct Availability

Cognitive, behavioral, and psychodynamic techniques can be effectively employed to introduce new information into self-representation. For example, new information can be introduced into the self-system by exposing patients to new situations (e.g., assertiveness training groups) or helping them to attend to particular types of experiences they typically ignore because such experiences are not considered within of the realm of self-definition (e.g., cognitive therapy techniques of monitoring mastery and pleasure). Identifying core self-beliefs that are based on significant early experiences and helping patients to work through the meaning of these beliefs can often remove long-held restrictions on self-definition and encourage development in new directions. These diverse therapeutic strategies share the common goal of helping patients have access to new experiences that can lead to the development of new, psychologically healthy self-constructs.

### Changing Patterns of Construct Accessibility

The accessibility of existing constructs can be increased or decreased. As Sedikides and Skowronski point out, frequently activating positive constructs may effectively reduce depression. It is also reasonable to assume that decreasing the accessibility of negative self-related constructs will be equally effective in reducing depression.

Numerous therapeutic strategies can be utilized to increase the accessibility of positive constructs or decrease the accessibility of negative constructs (Moretti, Higgins, & Feldman, 1990). Cognitive therapists can help depressed patients increase the amount of attention they devote to reviewing positive self-related constructs and limit the amount of attention spent dwelling on and generalizing from negative self-related information. This can be achieved by training patients to immediately identify and challenge negative self-related thoughts once they enter awareness, thus ensuring the equal activation of positive and negative self-related constructs.

Memories of significant events may serve as chronic activators of dysfunctional self-constructs. Psychodynamic interventions that help patients work through these experiences can often assist in eliminating this pattern or significantly reducing the extent to which these memories prime the accessibility of dysfunctional constructs. For example, an adult may recall painful memories of being criticized or ignored as a child. Psychodynamic psychotherapy may help this patient work through the affect associated with these memories and come to realize that these events may have occurred because of the limited resources of parents rather than because of the individual's personal defects. This type of change would significantly alter the power of these memories to prime negative self-related constructs.

Sedikides and Skowronski argue that "new adaptive cog-

nitive structures can be achieved without dramatic changes in the patient's everyday routine." It is important to note, however, that day-to-day activities are likely to be filled with events and information that frequently prime, and thereby maintain, dysfunctional accessibility patterns. It is therefore unlikely that change can occur unless intervention strategies offer at least equally frequent priming of adaptive cognitive constructs. Once-a-week priming of positive constructs is simply not sufficient to support adaptive cognitive structures in withstanding a dysfunctional and distressing environment. In such situations, therapists are wise to encourage their patients to make behavioral changes in their lives that will increase positive-construct accessibility and decrease negative-construct accessibility. This in effect broadens the therapeutic base that supports and maintains change in construct accessibility. Sometimes behavioral interventions of this nature cannot be introduced and, in these circumstances, it may be wise to offer more frequent therapeutic contact to ensure changes in construct accessibility.

It is important to keep in mind that self-related constructs may be structurally interconnected so that altering the accessibility of any one construct may alter the accessibility of other related constructs (Higgins, VanHook, & Dorfman, 1988). If this is indeed the case, therapists need to recognize that their interventions may have quite broad and sometimes unexpected effects on the pattern of construct accessibility within the self-system. The application of interventions designed to alter the accessibility of self-related constructs should therefore be guided by a thorough understanding of a patient's system of self-representation.

In summary, the principle of cognitive structure activation appears to be quite useful in helping researchers and clinicians understand and begin to answer critical questions about depression and psychotherapy. Sedikides and Skowronski's article—and, I hope, this commentary—present some interesting directions for depression researchers to pursue. Whether the principle will be of value in understanding other disorders remains to be demonstrated.

### Note

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## Cognitive Structure: A Component of Cognitive Context

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Sedikides and Skowronski have reviewed an impressive amount of research under the umbrella of “cognitive structure activation.” But have they achieved their aim of unveiling a general psychological law applicable across the fractionated field of psychology? Does this “law” “significantly enhance our understanding of thought and behavior” as claimed? In this commentary, I address two issues: (a) What is to be gained and what is lost by generalizing across so wide and diverse a territory? and (b) Is there a fundamental truth embedded in these claims? If so, what is it?

First, it is appropriate to ask whether this proposal adds anything to our understanding of cognition and communication in the social world. Does this daring generalization across a vast range of research reveal anything new? Does this proposal differ in any significant way from what is now recognized as general schema theory (e.g., Mandler, 1983, 1984; Rumelhart & Ortony, 1977)? Most important, what is a cognitive structure?

The authors state that “a cognitive structure is the mental representation of an object or idea.” The term *object* seems clear enough at first, but *idea* is not a well-defined term in psychology; one suspects that it is invoked here because there is no other term that applies to all the things that Sedikides and Skowronski want to include in their construct. Moreover, with one exception, none of the examples given is an object in any usually accepted sense of the term: The examples include semantic categories, scripts, procedures, memories, specific people—and, yes, specific objects. As the article unfolds, it turns out that the construct includes even more: narrative versus paradigmatic thinking, rational versus irrational problem solving, moods, creativity, motivations, and “hostility-relevant constructs.” In common psychological parlance, procedures are not considered equivalent to structures, nor would implicit motivational needs (such as achievement or affiliation) be considered within the same framework as explicit semantic categories. What is gained by

