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ORIGINAL PAPER

Approach, Avoidance, and the Self-Regulation of Affect and Action

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Abstract Several literatures converge on the idea that approach and avoidance/withdrawal behaviors are managed by two partially distinct self-regulatory system. The functions of these systems also appear to be embodied in discrepancy-reducing and -enlarging feedback loops, respectively. This article describes how the feedback construct has been used to address these two classes of action and the affective experiences that relate to them. Further discussion centers on the development of measures of individual differences in approach and avoidance tendencies, and how these measures can be (and have been) used as research tools, to investigate whether other phenomena have their roots in approach or avoidance.

Keywords Approach avoidance

Psychology sometimes returns to old ideas in new forms. One old idea that has re-emerged in a new set of clothes over the past two and a half decades is that behavior is built from two distinct kinds of action tendencies. Sometimes these are discussed simply as action tendencies: approach and avoidance (or withdrawal). Sometimes they are discussed in terms of motivations: appetitive and aversive. In either case, the argument is that these two classes of motives or actions are the fundamental building blocks that underlie the complexity of human behavior (e.g., Davidson, 1998).

The idea that behavior reduces to approach and avoidance tendencies is by no means new. It is implicit in the two facets of the Freudian superego—the ego ideal as behaviors to which the person aspires and the conscience as behaviors that are forbidden. The idea that approach and avoidance are the building blocks of behavior is most often linked, however, to the writings of Miller and Dollard (1941; Miller, 1944). The premise that these two tendencies are building blocks also led to the hypothesis that the tendencies are managed by different structures in the nervous system (e.g., Konorski, 1948; Miller, 1944; Schneirla, 1959).

In the past 20 years or so, these ideas have reemerged, in a family of theories with roots in neuropsychology, psychopathology, animal conditioning, and psychopharmacology. The theories of this family all include the idea that appetitive motivation and approach behavior are dealt with by what is termed a behavioral activation system (Fowles, 1980; Cloninger, 1987), behavioral approach system (Gray, 1981, 1987, 1990, 1994a, 1994b), behavioral engagement system (Depue, Krauss, & Spoont, 1987), or behavioral facilitation system (Depue & Collins, 1999). Aversive motivation and withdrawal or avoidance behavior are managed by a second system, usually called a behavioral inhibition system (Cloninger, 1987; Gray, 1981, 1987, 1990, 1994b), or withdrawal system (Davidson, 1984, 1988, 1995, 1998). These two systems are believed to have partially distinct neural substrates and exert distinct influences on action.

Feedback, action, and affect

I came to these ideas quite indirectly. For many years, Michael Scheier and I (e.g., Carver & Scheier, 1990, 1998, 1999) have explored a view in which people constitute organizations of self-regulating feedback systems (Powers, 1973). Most people who are only vaguely familiar with the concept of a feedback loop may think of it as embodied in physiological systems, such as those maintaining homeostatic control over body temperature and so on. However, the

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view we have pursued is that the same logical elements that underlie homeostasis underlie any attempt to attain a desired goal. Goal pursuit means having a goal, assessing where one is with respect to it, and taking steps to reduce the sensed discrepancy. This idea can be applied to motor-control goals such as reaching and grasping; it can also be applied to goals that are more abstract (e.g., being honest, being productive), and goals that are continually moving and evolving targets (e.g., developing a research career, having a sound marriage, raising children with the right kind of personal values). Discrepancy reducing feedback processes (negative feedback loops) are essentially approach processes.

Although discrepancy reducing feedback loops are the most commonly discussed sort of feedback process, there is also another kind: discrepancy *enlarging* loops. These loops act to create increasing distance from comparison values, which might be thought of as "anti-goals," values that the system tries not to embody. An intuitive example is a feared or disliked possible self (Markus & Nurius, 1986; Ogilvie, 1987). A discrepancy enlarging loop compares present conditions to the anti-goal and tries to increase the discrepancy between the two. These processes thus create avoidance, escape, or withdrawal.

The most obvious difference between these two kinds of feedback processes is that they push the current value in opposite directions with respect to the reference value. They also differ in how "directive" they are. Discrepancy reducing systems continue to home in on a target, even if the target is moving. Discrepancy enlarging systems involve a distancing process that in itself has no affirmative direction. It is strictly a matter of creating distance from the anti-goal.

In living systems, the functioning of a discrepancy enlarging process is typically constrained in some way by a discrepancy reducing process. What begins as purely avoidance often leads to approach. An avoidance loop tries to increase distance from the anti-goal; at some point an incentive becomes identified and an approach loop begins to engage. Once this happens, the person (with both loops active) is simultaneously trying to avoid the anti-goal and approach the goal. Thus, many cases of active avoidance of a threat also involve approach of an incentive. For example, we have suggested that this combination is represented in Higgins's (1996) concept of the ought self (Carver, Lawrence, & Scheier, 1999) and is often represented in Ryan and Deci's (1999) concept of introjected value (Carver & Scheier, 2000).

Action and affect

Carver and Scheier (1990, 1998) have also used the feedback concept to make an argument about what processes underlie the valenced feelings that are the core of emotions. The general sense of the argument is that a second "layer" of negative feedback systems monitors and manages how well people are doing at moving toward desired goals and away from anti-goals. The sensed *rate of progress* of the first system is compared to a criterion, and the result (the "error" between the two) is experienced as affect. If the rate is below the criterion, negative affect arises. If the rate is at the criterion, the person is affect-free. If the rate exceeds the criterion, positive affect arises. In essence, the idea is that positive feelings mean you're doing better at something than you need to (or expect to), and negative feelings mean you're doing worse than you need to (or expect to; for broader discussion, including further implications see Carver, 2003; Carver & Scheier, 1998, Chapters 8 and 9).

If affect reflects the error signal in a feedback loop, affect is a signal to adjust rate of progress. This would be true whether the rate is above the mark or below it—that is, whether affect is positive or negative. The adjustment (if this is a discrepancy-reducing feedback loop) functions to bring the sensed rate into conformity with the criterion. For negative feelings, this is completely intuitive. Negative feelings imply a rate that is too low. The first response to negative feelings usually is to try harder.

What follows from positive feelings, however, is counterintuitive to most people. In our view, positive feelings arise when things are going better than they need to. This view argues that people who exceed the criterion rate of progress (i.e., who have positive feelings) will reduce subsequent effort in this domain. They are likely to "coast" a little (cf. Frijda, 1994, p. 113)—not necessarily stop, but ease back such that subsequent rate of progress returns to the criterion. Although this hypothesis is interesting, it has not been much studied, and broader treatment of it is beyond the scope of this article (see Carver, 2003).

Affects linked to approach and to avoidance

Recall from the early part of this section the idea that there are both approach loops and avoidance loops. This suggests the possible basis for the existence of two different sets of affect qualities. The Carver and Scheier (1998) theory holds that positive affect results from doing well, and negative affect from doing poorly. But there is a difference between doing well at moving *toward* a desired goal and doing well at moving *away* from an anti-goal. Relying in part on insights from Higgins and his collaborators (reviewed in Higgins, 1996, 1997), Carver and Scheier (1998) argued for two bipolar dimensions of affective experience. One is generated by affect loops linked to approach behavior, the other is generated by those linked to avoidance. The former dimension ranges from elation to depression, the latter ranges from fear to relief and serenity (Roseman, 1984, has expressed a similar view; see also Frijda, 1986, 1988; Ortony, Clore, & Collins, 1988).

This is not the same argument as underlies other depictions of dual dimensions of affect, which are generally termed positive and negative affect (e.g., Cacioppo, Gardner, & Berntson, 1999; Watson, Wiese, Vaidya, & Tellegen, 1999). That view argues for two unipolar dimensions; ours argues for bipolar dimensions. This difference, which may at first seem subtle and minor, is in fact quite important. This difference is addressed in greater detail a bit later on.

Two systems in concert

Our view treats the systems that regulate action and affect as a simultaneously functioning two-layered array (Carver & Scheier, 1998, 1999, in press). The layers are analogous to position and velocity controls in a two-layered engineering control system (Clark, 1996). This organization permits high response speed while minimizing oscillation (thus not impairing accuracy). There is good reason to believe the simultaneous functioning of two layers of control has the same effects on behavior. A person with very reactive emotions overreacts and oscillates behaviorally; a person who is emotionally unreactive is slow to respond even to urgent events. A person whose emotional reactions are between the two extremes responds quickly but without undue overreaction and oscillation.

This two-layered viewpoint also implies a natural connection between affect and action. That is, if the input of the affect loop is a sensed rate of progress in action, the output of the affect loop must be a change in rate of that action. Thus, the affect loop has a direct influence on the action loop. Some changes in rate output are straightforward. If you are lagging behind, you try harder. Some changes are less straightforward. The rates of many "behaviors" are defined not by a pace of physical action but by choices among potential acts, or entire programs of action. For example, increasing your rate of progress on a project at work may mean choosing to spend a weekend working rather than playing with family and friends. Increasing your rate of being kind means choosing to do an act that reflects kindness, when an opportunity arises. Thus, change in rate must often be translated into terms such as concentration, or allocation of time and effort.

Note, however that the behavioral responses that are linked to the affects also lead to reduction of the affects. We thus would suggest that the affect system is, in a very basic sense, self-regulating (cf. Campos, Frankel, & Camras, 2004).

Approach and avoidance sensitivities

Let me return now to the topic of approach and avoidance processes. Having noticed the general resemblance between the two kinds of feedback loops and two classes of motives, my colleagues and I became interested in how deeply these two sets of ideas might be intertwined. We assume that there are individual differences in the sensitivity or strength of these motive systems. Some people by nature are highly engaged in the pursuit of whatever incentives arise (e.g., an upcoming social event, an unexpected opportunity), others are less drawn to them. Some people by nature are fixed on the possibility of threats or dangers in the environment (e.g., the potential for criticism, punishment for mistakes, dimly lit parking lots), others are less attuned to this. If the neurobiological systems managing approach and avoidance are independent in their sensitivities, individual differences in responsiveness to incentive and threat will also be independent, yielding all combinations of highs and lows.

Drawing on the writings of Gray (1981, 1987, 1990, 1994a, 1994b) and others (e.g., Depue & Iacono, 1989; Fowles, 1980), Carver and White (1994) devised a set of self-reports that they called the BIS/BAS scales. These reflect the sensitivity of the respondent's behavioral approach system and behavioral inhibition system. Carver and White found experimentally that people higher in BAS sensitivity (but not BIS sensitivity) had larger increases in happiness in response to a rewarding outcome. People higher in BIS sensitivity (but not BAS sensitivity) had larger increases in anxiety in response to a threat. These findings were exactly as would be expected from the biological models of appetitive and aversive motives from which the scales were designed.

These scales are useful for a wide variety of potential research applications. They have been related to broad views of personality in which approach and avoidance are considered the driving forces behind the dimensions of extraversion and neuroticism (Carver, Sutton, & Scheier, 2000; Carver & White, 1994; Elliot & Thrash, 2002; Zelenski & Larsen, 1999). They have also been related to relevant aspects of psychopathology (Johnson & Carver, in press; Johnson, Turner, & Iwata, 2003; Meyer, Johnson, & Carver, 1999; Meyer, Johnson, & Winters, 2001).

The application that is of greatest interest to me, however, is the use of these individual differences to investigate whether a given phenomenon pertains to approach or to avoidance. That is, using individual differences in BAS and BIS sensitivities would seem to represent a reasonable research strategy, a methodological tool (cf. Underwood, 1975). BAS and BIS sensitivities can be assessed and related (separately) to the phenomenon of interest. If the phenomenon is BIS-linked, it should relate to individual differences in BIS sensitivity. If the phenomenon is BAS-linked, it should relate to individual differences in BAS sensitivity. Indeed, implementation of that research strategy actually was the main reason for my interest in assessing these individual differences in the first place.

Affect reconsidered

I have since used this strategy to examine the grounding of two particular negative affects: sadness and anger (Carver, 2004). As noted earlier, there are important theoretical disagreements on the nature of the dimensionality of affect. I disregard here the view that holds the dimensions of affect to be valence and activation (e.g., Russell & Carroll, 1999) and also views that treat affects as distinct rather than dimensional (e.g., Izard, 1977; Levenson, 1994); I focus instead on views that relate two dimensions of affect to approach and avoidance. As one example, Gray (e.g., 1981, 1990, 1994b) held that the BIS is engaged by cues of punishment and cues of frustrative nonreward. He thus viewed BIS as responsible for negative feelings in response to either cue. Similarly, he held that BAS is engaged by cues of reward or of escape from (or avoidance of) punishment. BAS thus is responsible for positive feelings in response to such cues. Gray's view, then, has been one in which each system is responsible for affect of one hedonic tone (positive for BAS, negative for BIS). Several personality–social affect theories also take this position (Cacioppo et al., 1999; Lang, Bradley, & Cuthbert, 1998; Watson et al., 1999).

In contrast to this position, our analysis (Carver & Scheier, 1998), described earlier, argues for two bipolar dimensions. More specifically, we argued that certain negative affects arise from an approach process that is doing poorly at attaining its goals. If so, it should follow that individual differences in BAS sensitivity would predict the intensity of emergence of those negative affects under conditions that normatively evoke them. The affects I have in mind here are sadness, frustration, and anger. If all negative affects have their roots in the BIS, however, that should not happen. Instead, those affects should all relate instead to BIS sensitivities.

It is of particular importance here that all items of the BAS scales focus on affective and behavioral responses to incentive cues. More specifically, BAS-related items describe positive emotional and behavioral reactions to three aspects of the possibility of obtaining incentives (being motivated to seek them, being persistent in pursuit of them, and having positive feelings when obtaining them). No BAS item refers in any way to an adverse event, nor is there any hint of negative affect in the content of any BAS item. The opposite is true of BIS items. Each references a threatening event, and assesses emotional responsiveness to the threat. Based on the semantic content of the items, then, there should be a bias toward linking of BIS items to reports of adverse affective experiences, contrary to our prediction.

I tested these competing predictions in three studies (Carver, 2004). In Study 1, participants were led to believe that by performing well at a task they could obtain bonus credits toward a course requirement; but then they failed to do so. Under these conditions of frustrative non-reward, reports of being sad and frustrated related significantly to Fun seeking, a BAS scale, but not to BIS. In Study 2, participants were asked to imagine themselves in hypothetical scenarios, written to be anger-eliciting and potentially anxiety-eliciting. Reports of how the participants would feel in those situations were aggregated into those pertaining to anger and those pertaining to nervousness. Nervousness related to BIS, as would be expected by all of the theories under study. In contrast, anger related to Reward responsiveness, a BAS scale, and more weakly to BIS. In Study 3, conducted within two weeks of the terrorist attacks of September 2001, participants were asked to report their feelings about the events of that day. Fear related to BIS, as expected. Anger related to Reward responsiveness and Drive, both BAS scales. It appears from these results, and others reviewed in that article, that certain negative affects do indeed relate to inadequacy of approach rather than to avoidance. These findings thus appear to support the Carver-Scheier theoretical analysis of affect.

Clearly anger and sadness are different from each other, and a theoretical model that places both of them on the same dimension should be clear about their relationship to each

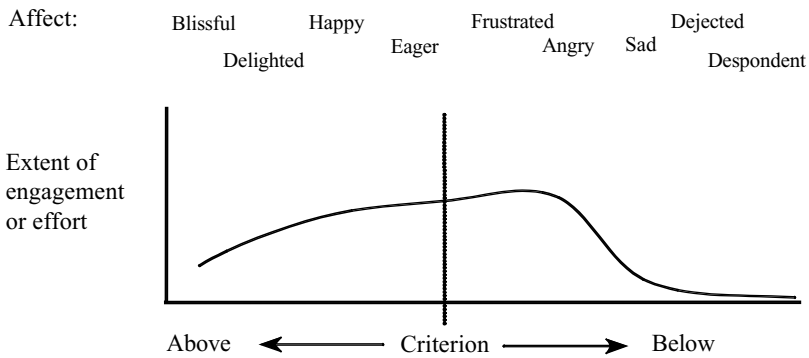

Fig. 1 Hypothesized approach-related affects as a function of doing well versus doing poorly compared to a criterion velocity. A second (vertical) dimension indicates the degree of behavioral engagement posited to be associated with affects at different degrees of departure from neutral. Adapted from C. S. Carver, Negative affects deriving from the behavioral approach system. *Emotion*, 2004, *4*, 3–22

other and to the approach function more generally. I have argued that one key issue here is a variable that has not been considered thus far in this article: the extent of the person's confidence of being able to bring the desired rate back to the criterion (Fig. 1; see Carver, 2004, for detail). Anger appears to be aimed at regaining lost ground. Sadness appears to imply that the effort seems pointless, the opportunity lost. Yet both of these qualities seem to be linked to a dimension that is organized around the function of approach of desired ends.

Conclusion

It seems quite clear that the approach and avoidance functions are deeply embedded in the nature of human personality (e.g., Carver et al., 2000; Zuckerman, 2005). As I said earlier, my own interest in these dimensions arose as a function of my being interested in other constructs. Yet those other constructs seemed to lead inexorably to a consideration of these two tendencies. I believe that their usefulness as organizing themes for theory development, along with partner constructs such as extraversion and neuroticism, has yet to be fully realized. I look forward to seeing what directions are taken by further work on those themes.

References

Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology*, *76,* 839–855.

Campos, J. J., Frankel, C. B., & Camras, L. (2004). On the nature of emotion regulation. *Child Development*, *75,* 377–394.

Carver, C. S. (2003). Pleasure as a sign you can attend to something else: Placing positive feelings within a general model of affect. *Cognition and Emotion*, *17,* 241–261.

Carver, C. S. (2004). Negative affects deriving from the behavioral approach system. *Emotion*, *4,* 3–22.

Carver, C. S., Lawrence, J. W., & Scheier, M. F. (1999). Self-discrepancies and affect: Incorporating the role of feared selves. *Personality and Social Psychology Bulletin*, *25,* 783–792.

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, *97,* 19–35.

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.

Carver, C. S., & Scheier, M. F. (1999). Themes and issues in the self-regulation of behavior. In R. S. Wyer, Jr. (Ed), *Advances in social cognition* (Vol. 12). Mahwah, NJ: Erlbaum.

Carver, C. S., & Scheier, M. F. (2000). Autonomy and self-regulation. *Psychological Inquiry*, *11,* 284–291.

Carver, C. S., & Scheier, M. F. (in press). Self-regulatory systems: Action and affect. In J. Y. Shah & W. Gardner (Eds.), *Handbook of motivation science*. New York: Guilford.

Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin*, *26,* 741–751.

Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, *67,* 319–333.

Clark, R. N. (1996). *Control system dynamics*. New York: Cambridge University Press.

Cloninger, C. R. (1987). A systematic method of clinical description and classification of personality variants: A proposal. *Archives of General Psychiatry*, *44,* 573–588.

Davidson, R. J. (1984). Affect, cognition, and hemispheric specialization. In C. E. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotion, cognition, and behavior* (pp. 320–365). New York: Cambridge University Press.

Davidson, R. J. (1988). EEG measures of cerebral asymmetry: Conceptual and methodological issues. *International Journal of Neuroscience*, *39,* 71–89.

Davidson, R. J. (1995). Cerebral asymmetry, emotion, and affective style. In R. J. Davidson, & K. Hugdahl (Eds.), *Brain asymmetry* (pp. 361–387). Cambridge, MA: MIT Press.

Davidson, R. J. (1998). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition and Emotion*, *12,* 307–330.

Depue, R. A., & Collins, P. F. (1999). Neurobiology of the structure of personality: Dopamine, facilitation of incentive motivation, and extraversion. *Behavioral and Brain Sciences*, *22,* 491–517.

Depue, R. A., & Iacono, W. G. (1989). Neurobehavioral aspects of affective disorders. *Annual Review of Psychology*, *40,* 457–492.

Depue, R. A., Krauss, S. P., & Spoont, M. R. (1987). A two-dimensional threshold model of seasonal bipolar affective disorder. In D. Magnusson & A. Öhman (Eds.), *Psychopathology: An interactional perspective* (pp. 95–123). Orlando, FL: Academic Press.

Elliot, A. J., & Thrash, T. M. (2002). Approach–avoidance motivation in personality: Approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology*, *82,* 804–818.

Fowles, D. C. (1980). The three arousal model: Implications of Gray's two-factor learning theory for heart rate, electrodermal activity, and psychopathy. *Psychophysiology*, *17,* 87–104.

Frijda, N. H. (1986). *The emotions*. Cambridge, England: Cambridge University Press.

Frijda, N. H. (1988). The laws of emotion. *American Psychologist*, *43,* 349–358.

Frijda, N. H. (1994). Emotions are functional, most of the time. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 112–126). New York: Oxford.

Gray, J. A. (1981). A critique of Eysenck′'s theory of personality. In H. J. Eysenck (Ed.), *A model for personality* (pp. 246–276). Berlin: Springer-Verlag.

Gray, J. A. (1987). Perspectives on anxiety and impulsivity: A commentary. *Journal of Research in Personality*, *21,* 493–509.

Gray, J. A. (1990). Brain systems that mediate both emotion and cognition. *Cognition and Emotion*, *4,* 269–288.

Gray, J. A. (1994a). Personality dimensions and emotion systems. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 329–331). New York: Oxford University Press.

Gray, J. A. (1994b). Three fundamental emotion systems. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 243–247). New York: Oxford University Press.

Higgins, E. T. (1996). Ideals, oughts, and regulatory focus: Affect and motivation from distinct pains and pleasures. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 91–114). New York: Guilford.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52,* 1280–1300.

Izard, C. E. (1977). *Human emotions*. New York: Plenum.

Johnson, S. L., & Carver, C. S. (in press). Extreme goal setting and vulnerability to mania among undiagnosed young adults. *Cognitive Therapy and Research*.

Johnson, S. L., Turner, R. J., & Iwata, N. (2003). BIS/BAS levels and psychiatric disorder: An epidemiological study. *Journal of Psychopathology and Behavioral Assessment*, *25,* 25–36.

Konorski, J. (1948). *Conditioned reflexes and neuron organization*. Cambridge, England: Cambridge University Press.

Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1998). Emotion, motivation, and anxiety: Brain mechanisms and psychophysiololgy. *Biological Psychiatry*, *44,* 1248–1263.

Levenson, R. W. (1994). Human emotion: A functional view. In P. Ekman & R. Davidson (Eds.), *The nature of emotions: Fundamental questions* (pp. 123–126). New York: Oxford University Press.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, *41,* 954–969.

Meyer, B., Johnson, S. L., & Carver, C. S. (1999). Exploring behavioral activation and inhibition sensitivities among college students at risk for bipolar spectrum symptomatology. *Journal of Psychopathology and Behavioral Assessment*, *21,* 275–292.

Meyer, B., Johnson, S. L., & Winters, R. (2001). Responsiveness to threat and incentive in bipolar disorder: Relations of the BIS/BAS scales with symptoms. *Journal of Psychopathology and Behavioral Assessment*, *23,* 133–143.

Miller, N. E. (1944). Experimental studies of conflict. In J. McV. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp. 431–465). New York: Ronald Press.

Miller, N. E., & Dollard, J. (1941). *Social learning and imitation*. New Haven: Yale University Press.

Ogilvie, D. M. (1987). The undesired self: A neglected variable in personality research. *Journal of Personality and Social Psychology*, *52,* 379–385.

Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*. New York: Cambridge University Press.

Powers, W. T. (1973). *Behavior: The control of perception*. Chicago: Aldine.

Roseman, I. J. (1984). Cognitive determinants of emotions: A structural theory. In P. Shaver (Ed.), *Review of personality and social psychology* (Vol. 5, pp. 11–36). Beverly Hills, CA: Sage.

Russell, J. A., & Carroll, J. M. (1999). On the bipolarity of positive and negative affect. *Psychological Bulletin*, *125,* 3–30.

Ryan, R. M., & Deci, E. L. (1999). Approaching and avoiding self-determination: Comparing cybernetic and organismic paradigms of motivation. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition* (Vol. 12, pp. 193–215). Mahwah, NJ: Erlbaum.

Schneirla, T. C. (1959). An evolutionary and developmental theory of biphasic processes underlying approach and withdrawal. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (Vol.7, pp. 1–42). Lincoln: University of Nebraska Press.

Underwood, B. J. (1975). Individual differences as a crucible in theory construction. *American Psychologist*, *30,* 128–134.

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, *76,* 820–838.

Zelenski, J. M., & Larsen, R. J. (1999). Susceptibility to affect: A comparison of three personality taxonomies. *Journal of Personality*, *67,* 761–791.

Zuckerman, M. (2005). *Psychobiology of personality* (2nd ed.). New York: Cambridge University Press.