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Handbook of Mental Control

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Contents

1

Changing Our Minds: An Introduction to Mental Control

DANIEL M. WEGNER
JAMES W. PENNEBAKER

The topic of *mental control* is new for psychology. The term has been used before in everyday language, of course, but only imprecisely and with several meanings. These range from the control *of* the mind, to control *by* the mind, even to the control of *others'* minds. Its intended meaning in this book centers on the first of these lay definitions (control of the mind) with a little help from the second (control by the mind). This volume brings together for the first time the research and theory of psychologists whose work explores the processes and strategies that are involved when people attempt to control their own minds.

Mental control occurs when people suppress a thought, concentrate on a sensation, inhibit an emotion, maintain a mood, stir up a desire, squelch a craving, or otherwise exert influence on their own mental states (Wegner, 1989; Wegner & Schneider, 1989). These types of mind-changing activities have in common the idea that people have preferences about their own thoughts, emotions, and motives, and that there are things they can do to influence these states. We introduce the topic in this chapter by considering, in turn, three key issues in the scientific study of mental control. The first concern of the chapter is to explore why the study of mental control might be useful. Our second concern is with developing an understanding of how this topic fits into psychology more generally. And the final section examines some general strategies and methods for the scientific study of mental control.

WHY MENTAL CONTROL MATTERS

Our decision to edit a book on mental control was driven by both theoretical and practical considerations. Over the last decade, a startling number of researchers within social, personality, cognitive, developmental, and clinical psychology have shifted their research foci to understanding the ways

individuals attempt to influence their own thoughts, emotions, and behaviors. In an era of self-improvement and health consciousness, we have been struck by how often people attempt and fail to control themselves. Judging from the popular and clinical literature, attempts at mental control can be frustrating, can threaten one's self-esteem, and can be related to mental and physical health problems.

Consider our society's dedication to suppressing smoking, alcohol and drug use, aggression, unhealthy dieting and sexual practices, self-defeating thought processes, and other unwanted behaviors. Most clinical applications directed at these problems have produced mixed results at best. Unfortunately, some of our most intractable problems have been attacked with atheoretical proscriptions such as "Just say no." In more cases than not, we do say "No" but our thoughts and behaviors reply, "Well, maybe this one time."

Clearly, attempts at mental control are potentially threatening on both a psychological and physiological level. Psychologically, when individuals attempt to control unwanted thoughts or behaviors, they place themselves in an awkward position. If successful in their mental control attempts, they can temporarily bask in their accomplishment. This success, however, is usually tempered because they must remain vigilant in their mental control attempts. The person who stops smoking or drinking must constantly be on guard against fleeting impulses to pick up a cigarette or a can of beer. Successful mental control, then, is ongoing.

Whereas mental control successes may be temporarily uplifting, mental control failures can be devastating. The man who cheats on his diet, for example, can feel like a failure. The cheating can confirm some of his basic beliefs about himself as being an out-of-control eater. The minor cheating, then, can result in full-blown binge eating (cf. Herman & Polivy, 1988). The net effect of mental control failures, then, is that the original unwanted thoughts and behaviors return with full force accompanied by exaggerated thoughts and feelings of failure. In short, successful and failed mental control attempts can affect and be affected by a broad array of self-related beliefs, schemas, emotions, and motives.

Mental control success and failure can also affect biological processes and physical health. Laboratory studies show that increased autonomic activity accompanies attempts at the control of thoughts (Wegner, Shortt, Blake, & Page, 1990), emotional responses (Gross & Levenson, 1992), and overt behaviors (Pennebaker & Chew, 1985). Other studies suggest that when animals must avoid noxious stimuli such as electric shocks by inhibiting their natural ongoing behavior, they exhibit heightened brain activity in certain lower (e.g, hippocampus, septum) and higher (frontal cortex) brain regions (Gray, 1975; Luria, 1980). Mental control, then, can be construed as both a biological and a psychological event.

Because individuals often must work at controlling their thoughts, moods, and behaviors over extended periods of time, it is not surprising that mental control can be considered a significant stressor. Mounting research indicates that people who continuously attempt to control their unwanted thoughts report greater rates of depression (Nolen-Hoeksema,

1990). Individuals who claim to have actively attempted to control their emotions concerning traumatic events earlier in their lives report higher rates of physician visits, hospitalizations, and major and minor health problems (e.g., Pennebaker & Susman, 1988).

Mental control matters. Problems associated with addictive disorders, depression, and impulsive behaviors are typically attributed to a lack of mental control. The exercise of mental control, however, is a double-edged sword. If it is not attempted, the person may suffer the consequences of unwanted thoughts, feelings, or behaviors. If it is attempted, mental control can produce serious unintended complications. Attempts at mental control—whether successful or not—can lead to a host of physical and psychological problems. The purpose of this book, then, is to explore the multiple dimensions of mental control and to reach an appreciation of its causes, consequences, and components.

THE MEANING OF MENTAL CONTROL

The term *mental control* does not appear in searches of the psychological literature prior to 1987. It is unusual that a topic this novel could give rise to treatment in a handbook-length work. This development suggests that the study of mental control has really been occurring for quite some time under other rubrics, only now to surge forward given the spark of a new synthesis. A recounting of these other rubrics will help to give a more detailed definition of what mental control might be, and thus of what this text is about.

Perhaps the humblest and most poorly organized sources of the concept of mental control can be found in the self-help book sections that stand next to psychology, or mingled with it, in most popular book stores (Dornbusch, 1965). Writers of "pop" psychology have seldom benefited from scientific research, of course, and for this reason the mental control remedies they recommend have remained untested and are the worthy targets of skepticism. But in one sense, this book can be taken as a first look at self-help from a scientific perspective. The idea that people can somehow influence their own psychological processes is the basic assumption of most popular psychological writing, and if nothing else, it illustrates the broad motivation people share to exert control over their minds.

Organized scientific psychology has had several movements that bring with them more focused concepts of mental control. The following enumeration of those movements is an attempt to present the fundamental themes in roughly historical order, with a view toward seeing how each one contributes to the meaning of mental control.

Attentional Activity

Mental control can be viewed as a function of attention. People can attend toward things or ideas, and away as well, and this apparently voluntary flexibility in how consciousness is linked to its contents can be taken as

definitive of mental control. William James (1890) is the most noteworthy early proponent of this idea, and his characterization of the "effort of attention" has had great influence on how psychology views the control of mental activity. James saw mental control as an effort akin to physical effort, and he wrote convincingly that moving the mind is like moving the muscles. And just as the muscles might operate on reflex, James held that attention could be wrested in various directions involuntarily as well.

A view of attention as the central faculty of mental control is part of much contemporary work in cognitive psychology. In particular, those theoretical views that distinguish between the more automatic and more controlled aspects of cognitive activity owe much to James's account (see, for example, Bargh, 1984; Hasher & Zacks, 1979; Logan, 1988; Shiffrin & Schneider, 1977; Uleman & Bargh, 1989; Posner & Snyder, 1975). With James, they hold that the mind sometimes operates in a fashion that is seemingly automatic and beyond our control, and that the mind is at other times operated by us with controlled and conscious choice.

Psychological Defense

When people are confronted with unpleasant or unacceptable mental states, they may attempt to overcome them in a variety of ways. Their strategies, both conscious and unconscious, were recognized by Freud (1915/1957) and elevated to a prominent position in his psychoanalytic theory, especially by his daughter, Anna Freud (1946). Concepts of defense ranging from repression to denial, suppression, intellectualization, rationalization, displacement, sublimation, projection, reaction formation, sensitization, self-deception, and on and on, have become the common parlance of both armchair analysis and scientific psychoanalytic theory.

Psychological defenses are mechanisms of mental control that people use in avoiding or manipulating mental states that they are strongly motivated to influence. Mental control, in this view, is seen less as a willful choice and more as an inevitable option toward which people are driven in the pursuit of relief from anxiety, ego threat, or other psychic pain. Ideas about mental control that have been inspired by this Freudian legacy range from the resolutely psychoanalytic "cognitive control" that surfaced some years ago (e.g., Gardner, Holzman, Klein, Linton, & Spence, 1959; Klein, 1958; Menninger, 1954) to modern variations on the theme that downplay analytical inference and instead attach assumptions from cognitive, social, and clinical psychology (see, for example, Greenwald, 1988; Horowitz, 1988; Lockard & Paulhus, 1988; Singer, 1990). In much of this, the central issue continues to be the proper understanding of Freud's fundamental idea, namely the concept of repression (Erdelyi, 1990). Ultimately, the mental control of unwanted thoughts is one of the most interesting and elusive phenomena of psychology (Wegner, 1989).

Self-Regulation Mechanism

There was a point not too long ago in the history of psychology when it was considered a serious logical lapse to believe that people could control anything at all. The highly mechanistic and behavioristic trends of the field

in mid-century were so strongly biased toward simple causal explanations that they lumped the idea of human goals and intentions in the same class with poltergeists, the oversoul, and talking to your plants. This trend was broken down by the gradual dissemination of the discovery that purposive behavior could be created by mechanisms. The realization that systems could be constructed to "seek" certain states or outcomes—just as a "smart" bomb seeks its target, for example—was the central breakthrough of the science of cybernetics (Wiener, 1948), and this development has had continuing influence on conceptions of the nature of control in psychology (Carver & Scheier, 1981; Miller, Galanter, & Pribram, 1960; Powers, 1973; Vallacher & Wegner, 1985; Wegner, 1989).

If the simple mechanism of a thermostat can regulate the temperature in a room, it makes sense that the complex mechanism of a person can regulate much more, including even the person's own mental states or processes. The idea that control is executed by some "higher order" mechanism upon various "lower order" mechanisms is often important to this logic. A self-regulation approach to mental control takes this observation as the first step and goes on to propose how control mechanisms might be arranged to produce the wide array of mental states observed in human psychology.

Self-Control Process

The desire for a clean or proper life has often been an impetus to the study of mental control. In this sense, mental control is a moral or pragmatic issue (Klausner, 1965). The early psychology of the will, for example, found it apt to categorize people into those strong-willed characters who could control their undesirable impulses, and others whose weak-willed constitutions left them forever indulging themselves in food, drink, sex, or other forbidden activities (e.g., Bain, 1888). Theories attributing all of this to strength of the will have been replaced over time with those that emphasize instead Dewey's (1922) call for the education of the will. Much of what has become the modern study of self-control has arisen, then, from developmental investigations of the transformation of the impulsive infant into the more self-controlled adult (e.g., Mischel, Shoda, & Rodriguez, 1989).

Clinical theorists concerned with self-destructive behavior patterns have viewed mental control in this way, as is understandable given their concern with creating effective techniques for the self-management of behavior problems (see, for example, Karoly & Kanfer, 1982; Mahoney & Thoresen, 1974; Meichenbaum, 1977). The study of such self-control tends to focus on specific behaviors (e.g., overeating, drug abuse, nail-biting, etc.), but principles emerging from these studies often have general application (Polivy, 1990). For our purposes, of course, the most central issues in this work involve just when and how mental control is related to behavioral self-control.

Coping Technique

One of the most compelling occasions for mental control is in the face of mental turmoil. When the mind is reeling in response to some traumatic

event, for example, it is natural to attempt to quell the storm by dimming sensation, stopping thought, or blocking the emotion. Mental control can be understood, then, as a response to stress, a standard reaction to the psychological effects that accrue from exposure to catastrophic life events or the cumulative stresses of living. This view of mental control stems from the explorations of coping techniques initiated by Lazarus (1966) and Menninger (1963).

It is now clear that the exercise of mental control dominates the psychological landscape for individuals who are victimized or otherwise exposed to major stress (Pennebaker, 1988, 1990; Silver, Boon, & Stones, 1983; Tait & Silver, 1989). Responses to injury, loss, abuse, rape, incest, bereavement, wartime, and a host of other life stresses go beyond active attempts to deal with new realities to include attempts to influence one's own mental states. These coping techniques include many specific plans (e.g., solve the problem, try to be happy, go out and meet a friend, etc.), but perhaps most frequently include a voiced intention simply to inhibit thought and emotion related to the stress. Mental control in this domain, then, focuses on emotional reactions most specifically, and often takes the form of global inhibition or constraint.

Social Interaction Strategy

Mental control is remarkably important as an aid to effective social interaction. Whether one is wishing to influence others, convey a particular impression, or simply get by, the control of the mind is an essential first step. Social strategies that involve any sort of deception, after all, will entail manipulating one's mental states so as to remain at least superficially consistent with the intended message. The relevant mental states must be summoned, and the irrelevant or antagonistic states must be jettisoned. The observation that this is not easy has been made by theorists concerned with problems of self-presentation (e.g., Goffman, 1959; Hochschild, 1983; Jones, 1990).

The social causation of mental control should not be underestimated. Although it is easy to belittle motives for politeness and pleasantry that seem to underly the operation of mental control in social settings, the sheer frequency of minor instances in life when people bend to these motives is enormous, and their resulting power is considerable. The desire to stop wanting fattening desserts, to avoid the unpleasantness of discussing a trauma, or to appear unruffled when speaking before an audience, it seems, can arise over and over in social life and generate continuous attempts to control one's mind. Mental control can lubricate the machinery of social life, and this may be among its most attractive purposes.

These six nutshell histories of mental control reveal a broad idea with many layers of meaning. The topic of mental control that is explored in this text has emerged from all of these themes and more. In this sense, the definition of mental control is as big and unwieldy as the definition of any complex psychological concept, and it will no doubt continue to grow and

change as progress is made in research. At its core, however, the concept is simple: People have reasons to want to influence their own mental states, and they commonly try to do so—with some degree of success.

INFERRING MENTAL CONTROL

How do we know if people can control their minds? Certainly they act as though they can do this at times. People may say they are going to sleep, concentrating on a problem, relaxing after a hard day, ignoring a worry, holding back an ugly impulse, looking on the bright side—and on and on. They also admit difficulty in these enterprises as well, noting that they are having trouble in avoiding the thought of a cigarette, for instance, or that they just can't seem to get into a good mood. Indeed, the unfulfilled desire for mental control is a broad and recurrent theme in literature. We find Somerset Maugham writing that "He tried to think of other things, but he had no command over his thoughts" (1964, p. 275), and Dostoyevsky observing that "Avidly he looked to the right and to the left, staring intently at every object, yet finding nothing on which he could fasten his attention" (1965, p. 504).

The question of whether and when people have mental control is a critical one for psychology. It has been a matter of lengthy inquiry in the recent history of philosophy (see, for example, Dennett, 1984), of course, because it trades heavily on the notion of "free will"—the question of whether people really ever have control over anything at all in any important sense. For psychology, the question of mental control hinges less on matters of free will than on the issue of scientific utility. Just as psychologists may use conceptions of thought and emotion without being as clear definitionally as most philosophers would prefer, psychologists may use the notion of mental control for their murky purposes as well. Such use hinges most fundamentally on whether a capacity for mental control can be inferred from observation of behavior and then used successfully to predict other behavior.

The intent of this section is to offer some basic ideas about how mental control is to be inferred. In essence, the topic is the operational definition of mental control. To begin with, we will take for granted much of the operationalist baggage of current cognitive, social, and clinical psychology. That is, we will assume that people's internal mental states (such as thoughts, emotions, attitudes, desires, moods, etc.) can be inferred from a variety of behavioral indicators of varying reliability and validity. These include self-report, of course, as well as psychophysiological measures, observers' reports, and behavioral indications such as reaction times and task performance. None of this is unique to the topic of mental control.

To infer mental control requires another step. When any mental change is inferred by these methods, it is still a matter of uncertainty whether the change is an instance of intentional mental control or simply a case of unintended but appropriate mental activity. Did the man control his anger, for example, or did he just cool off? There are a number of

other tests that must also be made for a mental change to qualify as intentional, and these must be satisfied before we can say that people are indeed controlling their own minds. Just as judging intentionality complicates the study of behavioral strategies of self-presentation (DePaulo, 1992), it is central in establishing the occurrence of mental control.

Several characteristics of intentional mental activity can be used to establish the degree to which mental control exists in any instance. These characteristics follow from the literature on how controlled cognitive processes can be distinguished from automatic ones (Bargh, 1984; Hasher & Zacks, 1979; Logan, 1988; Posner & Snyder, 1975; Shiffrin & Schneider, 1977; Uleman, 1989), and more generally, from analyses of the earmarks of intentionality and purpose in action (von Bertalanffy, 1968; Dennett, 1984; Heider, 1958; Vallacher & Wegner, 1985; Wegner & Vallacher, 1987). The following, then, are signs that a particular mental state (thought, emotion, desire, etc.) that is appropriate and motivated in a given situation has been attained through processes of mental control.

Voluntary Initiation and Inhibition

Can people start and stop a mental state when asked? People can, for example, concentrate on a thought when instructed to do so in the lab, and they can suppress it with some success as well (Wegner, Schneider, Carter, & White, 1987). They can sometimes experience a mood or emotion just on being asked to do so (Baumeister & Cooper, 1981; Slyker & McNally, 1991), for example, and they can also change their social perspective on social entities and situations on being asked (Wegner & Giuliano, 1982). These observations suggest that people might intend to do these things for themselves. Any mental state a person can initiate or inhibit as a result of instruction would seem to be a potential target of mental control.

Presence of Strategies

Are strategies for control of the mental state reported and used? If people have ways of expressing *how* they control a mental state that are mentioned widely and reliably, mental control may be possible for this state. In the case of thought suppression, for instance, people typically report that they "try to think of other things" (Wegner et al., 1987), and the results of suppression studies confirm that this is what they do (e.g., Wenzlaff, Wegner, & Klein, 1991). It is possible that even idiosyncratically reported strategies (e.g, "I howl like a wiener dog") would support the inference of intentional control of mind, however, because multiple means could certainly be followed to the end of mental control. When the use of any strategy can be observed directly—for example, as in Zillman's (1988) studies of people's self-exposure to television as a means of affect control—mental control would seem to be strongly suggested.

Demand on Cognitive Resources

Do competing mental tasks reduce the effectiveness of control attempts? Mental processes requiring conscious control can be undermined by parallel

demands for attentional resources, whereas processes requiring less control are not as easily disturbed in this way. Cognitive loads have been used very successfully to determine the degree of mental control people exercise in a variety of social cognitive processes (e.g., Gilbert, 1991). The influence of cognitive capacity has also been proposed for studies of the control of mood (Clark & Isen, 1982). In general, then, when the operation of a suspected mental control technique is disturbed by competing mental tasks, the inference is strengthened that mental control is operating.

Personal Responsibility

Are people held responsible for control of the mental state in everyday life? Uleman (1989) has pointed out that control of thinking is often a matter of personal responsibility. People are blamed for some mental states (e.g., the desire to harm another) and praised for others (e.g., loving an orphaned child). Although important exceptions may exist, this observation suggests that those mental states for which people are commonly held responsible may be ones that are open to mental control. Socially allocated responsibility may vary somewhat, however, according to cultural convention and legal precedent, so this feature of mental control can only be appreciated as an equivocal indicator.

Equifinality

If one method of mental control is blocked, do people find another? The inference of goal-directedness in everyday behavior is often substantiated by observations of equifinality, the existence of "many roads to the same destination." In the case of mental control, we might find, for example, that attempts to concentrate by someone who is studying would be accompanied by the avoidance of distractions, the provision of a bright light on the focal target, the ingestion of coffee in large quantities, and the like. If any of these study aids were removed, the individual might try to substitute others. Observation of such substitutions would help to substantiate the inference of intentional mental control.

Somatic Involvement

Mental control may be inferred from observations of the body. A wide array of nonverbal signs of mental conflict can be induced reliably by relevant situations (DePaulo, 1992), most notable among them the simple "freezing" that occurs in conflict situations. Various wanted or unwanted mental states may "leak" into physical behavior in the course of mental control, and these expressions are worthwhile signs of mental control in operation. Establishing the correspondence between particular signs and particular attempts at control is a task not yet even begun, but the payoffs could be considerable. It would be interesting indeed to be able to learn from a person's facial expression or posture that he or she was trying to overcome an anxiety attack, to stop the impulse to call out insults, or to arouse a desire for sexual flirtation. The use of more subtle measurements of bodily response through psychophysiological recording could allow yet

more subtle assessments of mental control activities (Pennebaker, Hughes & O'Heeron, 1987; Wegner, Shortt, Blake, & Page, 1990).

Self-Report

When all else fails, it is also possible to take the easy path and just ask people what they are doing. Many mental control attempts may be consciously reportable, as they began with conscious intentions and are continuing to operate as planned. It is not obvious, though, that mental control once set in motion will always be available for conscious report. A person might begin to concentrate on a task through exerting effort, for example, and then become engrossed in the task and lose track of the initial intention. Likewise, a desire to stop crying could be exercised briefly, only to be forgotten as the tears subside. These and other instances suggest that self-report could be effective just as mental control is being initiated, but that it might be a less useful source of evidence as the passage of time intervenes. It is not well understood at this time what internal cues individuals might rely upon to report that they are engaged in mental control, and for this reason self-report cannot be sanctioned as a foolproof measure.

Taken together, these various signs and techniques allow the investigation of the causes and consequences of mental control. With them, we can begin to fathom just what parts of the mind are open to our choosing, and what parts are closed. We can learn which circumstances may prompt attempts to control the mind, what techniques people use naturally, how these may be modified or improved, and what effects the exercise of mental control may have for the improvement or impairment of human psychological functioning. In short, we can discern whether and when people really can change their minds.

REFERENCES

BAIN, A. (1888). *The emotions and the will* (3rd ed.). London: Green. (Original work published 1859)

BARGH, J. A. (1984). Automatic and conscious processing of social information. In R. S. WYER, Jr., & T. K. SRULL (Eds.), *Handbook of social cognition* (Vol. 3, pp. 1–43). Hillsdale, NJ: Erlbaum.

BAUMEISTER, R. F., & COOPER, J. (1981). Can the public expectation of emotion cause that emotion? *Journal of Personality, 49*, 49–59.

CARVER, C. S., & SCHEIER, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag.

CLARK, M. S., & ISEN, A. M. (1982). Toward understanding the relationship between feeling states and social behavior. In A. H. HASTORF & A. M. ISEN (Eds.), *Cognitive social psychology* (pp. 73–108). New York: Elsevier North-Holland.

DENNETT, D. (1984). *Elbow room: Varieties of free will worth wanting*. Cambridge, MA: MIT Press.

DEPAULO, B. (1992). Nonverbal communication and self-presentation. *Psychological Bulletin, 111*, 203–243.

DEWEY, J. (1892). *Human nature and conduct*. New York: Holt.

DORNBUSCH, S. M. (1965). Popular psychology: A content analysis of contemporary inspirational nonreligious books. In. S. Z. KLAUSNER (Ed.), *The quest for self-control* (pp. 126–140). New York: Free Press.

DOSTOYEVSKY, F. (1925). *Crime and punishment*. New York: Dutton.

ERDELYI, M. H. (1990). Repression, reconstruction, and defense: History and integration of the psychoanalytic and experimental frameworks. In. J. L. SINGER (Ed.), *Repression and Dissociation* (pp. 1–31). Chicago: Univ. of Chicago Press.

FREUD, A. (1946). *The ego and the mechanism of defense*. New York: International Universities Press.

FREUD, S. (1957). Repression. In J. STRACHEY (Ed.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 14, pp. 146–158). London: Hogarth Press. (Original work published 1915)

GARDNER, R. W., HOLZMAN, P. S., KLEIN, G. S., LINTON, H. B., & SPENCE, D. B. (1959). Cognitive control: A study of individual consistency in cognitive behavior. *Psychological Issues, 1*, Monograph No. 4,

GILBERT, D. T. (1991). How mental systems believe. *American Psychologist, 46*, 107–119.

GOFFMAN, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday.

GRAY, J. (1975). *Elements of a two-factor theory of learning*. New York: Academic Press.

GREENWALD, A. G. (1988). Self-knowledge and self-deception. In J. S. LOCKARD & D. L. PAULHUS (Eds.), *Self-deception: An adaptive mechanism?* (pp. 113–131). Englewood Cliffs, NJ: Prentice Hall.

GROSS, J. J., & LEVENSON, R. W. (1992). *Emotional suppression: Physiology, self-report, and expressive behavior*. Manuscript submitted for publication. University of California, Berkeley.

HASHER, L., & ZACKS, R. T. (1979). Automatic and effortful processes in memory. *Journal of Experimental Psychology: General, 108*, 356–388.

HEIDER, F. (1958). *The psychology of interpersonal relations*. New York: John Wiley.

HERMAN, C. P., & POLIVY, J. (1988). Studies of eating in normal dieters. In B. T. WALSH (Ed.), *Eating behavior in eating disorders* (pp. 95–111). Washington, DC: American Psychiatric Association Press.

HOCHSCHILD, A. R. (1983). *The managed heart*. Berkeley: University of California Press.

HOROWITZ, M. J. (1988). *Psychodynamics and cognition*. Chicago: University of Chicago Press.

JAMES, W. (1890). *The principles of psychology*. New York: Holt.

JONES, E. E. (1990). *Interpersonal perception*. New York: W. H. Freeman & Company Publishers.

KAROLY, P., & KANFER, F. H. (Eds.) (1982). *Self-management and behavior change*. New York: Pergamon Press.

KLAUSNER, S. Z. (1965). *The quest for self-control*. New York: Free Press.

KLEIN, G. S. (1958). Cognitive control and motivation. In G. LINDZEY (Ed.), *Assessment of human motives*. New York: Holt, Rinehart & Winston.

LAZARUS, R. L. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.

LOCKARD, J. S., & PAULHUS, D. L. (Eds.) (1988). *Self-deception: An adaptive mechanism?* Englewood Cliffs, NJ: Prentice Hall.

LOGAN, G. D. (1988). Toward an instance theory of automatization. *Psychological Review, 95*, 492–527.

LURIA, A. R. (1980). *Higher cortical functions in man* (2nd ed.). New York: Basic Books.

MAHONEY, M. J., & THORESEN, C. E. (1974). *Self-control: Power to the person*. Monterey, CA: Brooks/Cole.

MAUGHAM, W. S. (1964). *Of human bondage*. New York: Pocket Books.

MEICHENBAUM, D. (1977). *Cognitive-behavior modification*. New York: Plenum.

MENNINGER, K. (1954). Regulatory devices of the ego under major stress. *International Journal of Psychoanalysis, 35*, 412–420.

MENNINGER, K. (1963). *The vital balance*. New York: Viking.

MILLER, G. A., GALANTER, E., & PRIBRAM, K. H. (1960). *Plans and the structure of behavior*. New York: Holt.

MISCHEL, W., SHODA, Y., & RODRIGUEZ, M. L. (1989). Delay of gratification in children. *Science, 244*, 933–938.

NOLEN-HOEKSEMA, S. (1990). *Sex differences in depression*. Stanford, CA: Stanford University Press.

PENNEBAKER, J. W. (1988). Confession, inhibition, and disease. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22). Orlando, FL: Academic Press.

PENNEBAKER, J. W. (1990). *Opening up*. New York: Morrow.

PENNEBAKER, J. W., & CHEW, C. H. (1985). Deception, electrodermal activity, and inhibition of behavior. *Journal of Personality and Social Psychology, 49*, 1427–1433.

PENNEBAKER, J. W., HUGHES, C. F., & O'HEERON, R. C. (1987). The psychophysiology of confession: Linking inhibitory and psychosomatic processes. *Journal of Personality and Social Psychology, 52,* 781–793.

PENNEBAKER, J. W., & SUSMAN, J. R. (1988). Disclosure of traumas and psychosomatic processes. *Social Science and Medicine, 26,* 327–332.

POLIVY, J. (1990). Inhibition of internally-cued behavior. In E. T. HIGGINS & R. M. SORRENTINO (Eds.), *Handbook of motivation and cognition* (Vol. 2, pp. 131–147). New York: Guilford Press.

POSNER, M. I., & SNYDER, C. R. R. (1975). Attention and cognitive control. In R. L. SOLSO (Ed.), *Information processing and cognition.* Hillsdale, NJ: Erlbaum.

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

SHIFFRIN, R. M., & SCHNEIDER, W. (1977). Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory. *Psychological Review, 84,* 127–190.

SILVER, R. L., BOON, C., & STONES, M. H. (1983). Searching for meaning in misfortune: Making sense of incest. *Journal of Social Issues, 39,* 81–102.

SINGER, J. L. (1990). *Repression and dissociation.* Chicago: University of Chicago Press.

SLYKER, J. P., & MCNALLY, R. J. (1991). Experimental induction of anxious and depressed moods: Are Velten and musical procedures necessary? *Cognitive Therapy and Research, 15,* 33–45.

TAIT, R., & SILVER, R. C. (1989). Coming to terms with major negative life events. In J. S. ULEMAN & J. A. BARGH (Eds.), *Unintended thought* (pp. 351–382). New York: Guilford Press.

ULEMAN, J. S. (1989). A framework for thinking intentionally about unintended thoughts. In J. S. ULEMAN & J. A. BARGH (Eds.), *Unintended thought* (pp. 425–449). New York: Guilford Press.

ULEMAN, J. S., & BARGH, J. A. (1989). *Unintended thought.* New York: Guilford Press.

VALLACHER, R. R., & WEGNER, D. M. (1985). *A theory of action identification.* Hillsdale, NJ: Erlbaum.

VON BERTALANFFY, L. (1968). *General system theory.* New York: Braziller.

WEGNER, D. M. (1989). *White bears and other unwanted thoughts.* New York: Viking.

WEGNER, D. M., & GIULIANO, T. (1982). The forms of social awareness. In W. J. ICKES & E. S. KNOWLES (Eds.), *Personality, roles, and social behavior* (pp. 165–198). New York: Springer-Verlag.

WEGNER, D. M., & SCHNEIDER, D. J. (1989). Mental control: The war of the ghosts in the machine. In J. S. ULEMAN & J. A. BARGH (Eds.), *Unintended thought* (pp. 287–305). New York: Guilford Press.

WEGNER, D. M., SCHNEIDER, D. J., CARTER, S., III, & WHITE, L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology, 53,* 5–13.

WEGNER, D. M., & VALLACHER, R. R. (1987). The trouble with action. *Social Cognition, 5,* 179–190.

WEGNER, D. M., SHORTT, J. W., BLAKE, A. W., & PAGE, M. S. (1990). The suppression of exciting thoughts. *Journal of Personality and Social Psychology, 58,* 409–418.

WENZLAFF, R. M., WEGNER, D. M., & KLEIN, S. B. (1991). The role of thought suppression in the association of thought and mood. *Journal of Personality and Social Psychology, 60,* 500–508.

WIENER, N. (1948). *Cybernetics, or control and communication in the animal and the machine.* New York: John Wiley.

ZILLMAN, D. (1988). Mood management: Using entertainment to full advantage. In L. DONOHEW, H. E. SYPHER, & E. T. HIGGINS (Eds.). *Communication, social cognition, and affect* (pp. 147–171). Hillsdale, NJ: Erlbaum.