Special Section

WHEN THE ANTIDOTE IS THE POISON:
Ironic Mental Control Processes

Daniel M. Wegner
University of Virginia

Abstract—*The theory of ironic processes of mental control holds that both the most and the least desired effects of attempts to control one's own mental states accrue from two processes:* an intentional operating process *(a conscious, effortful search for mental contents that will produce a desired state of mind) and an* ironic monitoring process *(an unconscious, automatic search for mental contents that signal a failure to produce the desired state of mind). Although the monitoring process usually functions just to activate the operating process, during stress, distraction, time urgency, or other mental load, the monitor's effects on mind can supersede those of the operator, producing the very state of mind that is least desired. An individual's attempts to gain mental control may thus precipitate the unwanted mental states they were intended to remedy.*

My third maxim was to endeavor always to conquer myself rather than the order of the world, and in general, accustom myself to the persuasion that, except our own thoughts, there is nothing absolutely in our power.

—René Descartes (*Discourse on Method*, Part III)

Descartes probably should have stopped at two maxims. This third one has the sound of truth, but it seems to get people in a lot of trouble. At some level, of course, his conviction that we can control our thoughts, and so ourselves, serves everyone well from time to time. It seems perfectly sensible, for instance, that a person trying to abstain from alcohol might begin by trying not to think about drinking. And too, it stands to reason that a person who feels overanxious might try mentally to relax, or that a depressed person might hope to remedy the problem by avoiding sad thoughts. According to Descartes, after all, our thoughts are absolutely in our power. But the simple decision to try to control our minds can sometimes lead us wildly out of control—turning what we thought was an antidote for our mental malaise into the very poison that creates it.

Research conducted on *ironic processes of mental control* (Wegner, 1994) indicates how the use of mental control can backfire. This work started with the observation that it is difficult not to think about even a white bear when this is one's explicit desire (Wegner, 1989). Trying not to think about it, in some funny way, is just what makes such thoughts happen. It turns out that the more general idea may also be true—that any attempt at mental control contains the seeds of its own undoing. Under certain conditions, in other words, mental control may not only fail to achieve desired states of mind, but can ironically create precisely the most undesired state of mind. Trying to be happy can make us sad, trying to be relaxed can make us anxious, trying not to think of alcohol can make us obsessed with our next drink. A person innocently engaged in what seems to be a program of self-

Address correspondence to Daniel M. Wegner, Department of Psychology, Gilmer Hall, University of Virginia, Charlottesville, VA 22903; e-mail: dwegner@virginia.edu.

improvement may unwittingly create the very psychological problem he or she is working so hard to overcome.

IRONIC PROCESS THEORY

The theory of ironic processes suggests that this cruel perversion of our desires can happen because of the architecture of the mental system by which we achieve whatever mental control we do manage to summon. Mental control is accomplished, in this view, by the interaction of two processes—an *intentional operating process* that is conscious, effortful, and interruptible and an *ironic monitoring process* that is unconscious, less effortful, and uninterruptible. The operating process promotes the intended mental control by searching for mental contents consistent with the intended state of mind; so, for example, this process might look for distractors when the person is trying to suppress a thought, or for signs of fatigue when the person is trying to go to sleep. The monitoring process, in turn, searches for mental contents signaling a failure to create the intended state of mind. In the case of thought suppression, for instance, the monitor looks for the to-be-suppressed thought. In the case of trying to sleep, the monitor looks for signs of wakefulness.

The two processes function together as a feedback unit to produce mental control. The person who is trying to stop thinking about cigarettes in the hopes of quitting smoking, for example, likely expends considerable conscious effort in the form of an operating process that is looking for distractors. This strategy might well succeed, and launch the person into thoughts that are smoke-free. Meanwhile, however, the monitoring process searches unconsciously for thoughts of cigarettes by scanning memories and environmental cues. When the monitor encounters such thoughts, it brings them into consciousness and restarts the operating process—and the person again tries to think of anything other than a smoke. Over time, the cyclic interplay of the processes moves, in fits and starts, to keep cigarette thoughts out of mind.

The irony of the monitor, however, is that in providing the needed search for the failure of mental control, it increases the accessibility of exactly the most undesirable thoughts. In the case of the smoke-ender, cigarettes and smoke and tobacco and ashtrays all become highlighted by the monitoring process. As long as the operating process is healthy and unimpaired, this is only a small problem. The operating process is far more effective than the monitor given the luxury of the processing capacity it consumes, and so it usually overwhelms the slight sensitivity to counterintentional mental contents produced by the monitor. However, when mental load arises—in the form of distractions, stress, time pressure, alcohol intoxication, or other impairment of processing efficiency—the operating process may be overtaken by the monitoring process in its ability to fill consciousness with the products of its search. Mental control then not only ceases, but works against itself to bring to mind unwanted contents.

This theory has been tested in several areas of mental control, and

the general prediction has been substantiated repeatedly. Intended thought suppression under mental load creates exaggerated cognitive accessibility of the suppressed thought (Wegner & Erber. 1992): intended concentration under load increases the accessibility of distractors (Wegner. 1997; Zukier & Hagen. 1978): intended mood control under load leads to greater accessibility of thoughts relevant to the unwanted mood. and to self-reports of mood opposite the one intended (Wegner, Erber. & Zanakos. 1993); intended relaxation under load promotes arousal (Wegner, Broome. & Blumberg. 1997); intended sleep under load produces wakefulness (Ansfield. Wegner. & Bowser. 1996); intended forgetting under load yields remembering (Macrae. Bodenhausen. Milne. & Ford. in press); intended immobilization of a handheld pendulum under load increases movement in the counterintentional direction; and intended avoidance of overshooting a golf putt under load induces just such overshots (Wegner. Ansfield. & Pilloff. 1997).

These discoveries of ironic effects of mental control give the decided impression of slapstick—of human foibles that thwart our best intentions in ways ranging from comic to tragic. The fact that these ironic errors do not always happen. however. suggests that such findings signal potential pathways toward the effective control of mind. To begin with. they indicate that mental control must be approached with care (if the antidote is to be curative. it must be used under conditions that do not allow it to turn into the poison). Certainly. mental control should not be exerted when mental load is present. When the individual is under stress or is otherwise distracted. the all-too-common consequence of mental control will be ironic error. It is worth remembering, then. that attempts to manage stress. avoid time pressure. and engineer our environments to reduce their load on our thinking are not mere luxuries that make life easier or more pleasurable. but may well be necessities if we hope to achieve any success in mental control.

A recognition of the danger of mental load is particularly apropos for the self-control efforts of individuals whose depressed mood. pharmacologically induced mental load. or stressful life circumstance might ensure that any attempt at mental control would precipitate immediate ironic failure. But the danger also holds in many cases when the appropriate operating process is a difficult one that might be easily disrupted by even moderate distractions. Some forms of mental control are just so difficult that most people simply do not have the mental capacity to perform them. The suggestion to avoid mental control under load. then. extends to the related idea that one should select one's mental control efforts carefully. "picking one's fights" to bypass those that are simply beyond one's ability. It may be child's play to stop thinking of a traffic ticket one received earlier in the day. for example. whereas it could be beyond one's ability to keep thoughts of a loved one's recent death out of mind.

Ultimately. though. it seems that people do choose to engage in mental control when they should not. and it is instructive to consider the likely outcome of this choice. Elsewhere. I (Wegner. 1994) have suggested that such ill-advised projects could create psychopathology through *self-loading ironic systems*. cycles of exacerbation in which the person's failing mental control strategy leads to a decrement in mental capacity. which then yields continued failure of mental control. It is easy to imagine how a person who tries to avoid a panic attack. for instance. might over time and repeated attacks spiral into such preoccupation with panic that the mental load of thinking about the problem itself undermines any operating processes aimed at pro-

ducing mental contents that are not panic related. The finding that people with panic disorder are especially prone to attacks when they try to relax (Adler. Kraske. & Barlow. 1987) is consistent with this possibility.

Perhaps a variety of conditions may be accompanied by the proneness to ironic effects predicted by such a self-loading ironic mechanism. Evidence in support of this idea comes from studies finding high levels of cognitive accessibility for problem-relevant thoughts in several disorders. Stroop interference studies and similar assessments have found magnified accessibility of anxiety-related thoughts in anxiety disorders (Logan & Goetsch. 1993). of depression-related thoughts in depression (Gotlib & McCann. 1984). and of food- and body-related thoughts in eating disorders (Cooper & Fairburn. 1992). Attempts to explain such activation have focused on the possibility that people come to rehearse such thoughts repeatedly. but there is little evidence for this (Williams. Mathews. & MacLeod. 1996). It makes sense instead that people who have these problems might be trying to control them mentally. and that in so doing. they are enhancing the activity of ironic monitoring processes that bring these issues intrusively back to mind (Wegner & Zanakos. 1994).

TREATMENT IMPLICATIONS

How could such psychopathologies be treated? Beyond the reduction in cognitive load or stress suggested by the theory's most general provision. there are several other possible avenues. The use of paradoxical therapies (e.g.. Shoham-Salomon & Rosenthal. 1987) might help to revise or rescind a client's commitment to mental control in the first place. and thereby put the brakes on ironic effects. Advice suggesting that people think their unwanted thoughts. dwell on their worries. concentrate on thoughts of food while they diet. or the like. may undo the problem by undoing the control. This strategy could sometimes be difficult. though. as many clients could bring years of practice and striving toward mental control with them to therapy. and so find the recommendation that they drop their quest particularly hard to embrace. New means for inducing people to relinquish their attempts at mental control could be useful in this regard.

A related way in which this theory suggests psychotherapeutic possibilities is through research on ironic processes in secrecy. As it happens. keeping one's problems secret from others involves the use of mental control. and this mental control itself can create ironies. People who keep secrets in the laboratory or in everyday life commonly become preoccupied with them. because the exercise of secret keeping introduces automatic monitoring of the secret thoughts. behaviors. or emotions that can yield ironic errors under mental load (e.g.. Lane & Wegner. 1995). Psychopathological thoughts and behaviors are often hidden from other people. and the individual's desire to maintain such secrecy can thus act to perpetuate the occurrence of the very thoughts and behaviors that are being hidden. Therapies that encourage the disclosure of personal thoughts or memories to the therapist or to others more generally might gain their effectiveness. in part. by releasing the individual from ironic processes that otherwise are stimulated by the cloak of secrecy (Wegner & Lane. 1995).

Another tack to therapy suggested by this theory involves attempts to enhance the efficiency of the operating process invoked in particular cases of mental control. When people choose poor strategies for mental control. or when they have had little practice and so perform them haltingly. their chances of producing ironic effects become

greater. It could be that therapeutic regimens aimed at structuring and automatizing certain mental control techniques could serve to make them the true antidotes people desire when they first elect to treat themselves. The ability to stop smoking or to diet. for example. may be something that is acquired with practice (Schachter. 1982). There are hundreds of instances in daily life when practice helps with minor forms of mental control—as when people learn to compliment the host on whatever was edible and simply fail to mention the things that were not—so practice as a therapy might succeed when such control is indeed possible.

It seems clear. then. that the ironic process theory has several implications for the development of psychotherapy. Yet more are suggested by Shoham and Rohrbaugh (this issue). The most difficult part of applying this theory to therapy. it turns out. is determining which way to go. Is a particular case of mental control one that is so hopeless that it should be abandoned. and therapeutic efforts should be aimed at helping the client to get off this merry-go-round? Or is this case one in which mental control might be achieved if it were done in just the right way or with enough frequency? These questions deserve further research. as there must be a way to discern general rules that could help in making these decisions in individual cases and even across broad syndromes. In the meantime. it seems certain that when people do attempt to control their minds. at some times they will succeed wonderfully and make themselves happy that they have this fine human ability. At other times. they will fail. and descend into an ironic self-defeating cycle of self-help gone awry.

REFERENCES

Adler. C.M.. Kraske. M.G.. & Barlow. D.H. (1987). Relaxation-induced panic (RIP): When resting isn't peaceful. *Integrative Psychiatry.* 26. 94–112.

Ansfield. M.E.. Wegner. D.M.. & Bowser. R. (1996). Ironic effects of sleep urgency. *Behaviour Research and Therapy. 34.* 523–531.

Cooper. M.J.. & Fairburn. C.G. (1992). Selective processing of eating. weight. and shape related words in patients with eating disorders and dieters. *British Journal of Clinical Psychology. 31.* 363–365.

Gotlib. I.H.. & McCann. C.D. (1984). Construct accessibility and depression: An examination of cognitive and affective factors. *Journal of Personality and Social Psychology. 47.* 427–439.

Lane. J.D.. & Wegner. D.M. (1995). The cognitive consequences of secrecy. *Journal of Personality and Social Psychology. 69.* 237–253.

Logan. A.C.. & Goetsch. V.L. (1993). Attention to external threat cues in anxiety states. *Clinical Psychology Review. 13.* 541–559.

Macrae. C.N.. Bodenhausen. G.V.. Milne. A.B.. & Ford. R.L. (in press). On the regulation of recollection: The intentional forgetting of stereotypical memories. *Journal of Personality and Social Psychology.*

Schachter. S. (1982). Recidivism and self-cure of smoking and obesity. *American Psychologist. 37.* 436–444.

Shoham-Salomon. V.. & Rosenthal. R. (1987). Paradoxical interventions: A meta-analysis. *Journal of Consulting and Clinical Psychology. 55.* 22–28.

Wegner. D.M. (1989). *White bears and other unwanted thoughts: Suppression. obsession. and the psychology of mental control.* New York: Viking.

Wegner. D.M. (1994). Ironic processes of mental control. *Psychological Review. 101.* 34–52.

Wegner. D.M. (1997). Why the mind wanders. In J.D. Cohen & J.W. Schooler (Eds.). *Scientific approaches to consciousness* (pp. 295–315). Hillsdale. NJ: Erlbaum.

Wegner. D.M.. Ansfield. M.. & Pilloff. D. (1997). *The putt and the pendulum: Ironies of motor control.* Unpublished manuscript. University of Virginia. Charlottesville.

Wegner. D.M.. Broome. A.. & Blumberg. S.J. (1997). Ironic effects of trying to relax under stress. *Behaviour Research and Therapy. 35.* 11–21.

Wegner. D.M.. & Erber. R. (1992). The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology. 63.* 903–912.

Wegner. D.M.. Erber. R.. & Zanakos. S. (1993). Ironic processes in the mental control of mood and mood-related thought. *Journal of Personality and Social Psychology. 65.* 1093–1104.

Wegner. D.M.. & Lane. J.D. (1995). From secrecy to psychopathology. In J.W. Pennebaker (Ed.). *Emotion. disclosure. and health* (pp. 25–46). Washington. DC: American Psychological Association.

Wegner. D.M.. & Zanakos. S. (1994). Chronic thought suppression. *Journal of Personality. 62.* 615–640.

Williams. J.M.G.. Mathews. A.. & MacLeod. C. (1996). The emotional Stroop task and psychopathology. *Psychological Bulletin. 120.* 3–24.

Zukier. H.. & Hagen. J.W. (1978). The development of selective attention under distracting conditions. *Child Development. 49.* 870–873.