



Daniel M. Wegner

Award for Distinguished Scientific Contributions

Citation

“For seminal contributions that span psychology’s breadth—from cognitive to social to personality to clinical—and that reach beyond its borders to philosophy and neuroscience. Daniel M. Wegner’s studies on transactive memory, action identification, ironic processes, and apparent mental causation all bear his characteristic mark: a beautiful idea brought to life by an elegant experiment. He has spent his scientific career identifying new and important problems and then offering solutions that sparkle with originality and insight. He has seen doors where others saw walls, opened them to reveal new rooms, and illuminated their dark corners.”

Biography

Daniel M. Wegner was born in 1948 in Calgary, Alberta, Canada, little knowing that he would someday write about himself in these pages in the third person. He was the only child of Ewald, a minister, and Amanda, a musician, and happily shared their belief that the world revolved around him. The family relocated, eventually, to Lansing, Michigan (even the center of the universe tags along when his parents move). He resisted their hopes that he follow them in ministry or music and emerged instead as *Dan Wegner, Boy Scientist*. He played with a chemistry set and dabbled in fireworks. He made a Tesla coil to generate indoor lightning, built a home-made gas laser, and fashioned a world-class stink bomb that was inadvertently detonated in the basement. One nerdy high school project after another garnered him awards at science

fairs for work in botany, electronics, and physics and also a reputation as someone whose social life bordered on tragic.

The science projects were mentored by helpful scientists he met by poking his nose into labs at Michigan State, the university next door, and it was natural he would sign up as a physics major there. However, physics was less fun as a life calling than it had been in the good old stink-bomb days, and the sixties were happening. Consciousness was breaking out all over, and hopes of making more love than war led him to psychology (and to more interesting parties). His social life was, in fact, becoming almost normal—and the science of psychology was far more human than physics. Here was a way to satisfy the desire for discovery that could value inner experience. Research with Jim Uleman drew him into the psychology lab, and he continued studying at Michigan State University all the way through graduate school without ever thinking there might be lives other than being a Spartan or a psychologist.

Graduate school was a mix of challenge and delight. A few professors loomed into view like fun-house ghouls, but the most memorable among his early influences were admirable models of expertise, kindness, and generous advice: Henry Clay Smith, Lawrence Messé, and his dissertation supervisor, William Crano. Each turned out to be the kind of adviser who deserves to have a statue in his honor that is guaranteed pigeon free forever. Two graduate school classmates were also deeply influential, first as thinkers and then as lifelong friends who continued thinking: Robin Vallacher’s knack for the self-referent turn of phrase was inspiring, often giving new meaning to the words *new meaning*, and Chris Gilbert’s ability to launch pencils into the ceiling while inventing clever absurdities was legendary. The Hidden Brain Damage Scale that the three authored in their Michigan State offices remains the only instrument capable of predicting preference for pimiento loaf (Wegner, Vallacher, & Gilbert, 1979).

Then there was his first academic job, at Trinity University in San Antonio in 1974. Teaching four courses a semester and learning to cook Tex–Mex were all he could manage for a while, but he continued to be inordinately amused by Vallacher, and in 1977 they wrote *Implicit Psychology*, an introduction to social cognition that appeared just as the field was developing (Wegner & Vallacher, 1977). At Trinity, he met Toni Giuliano and began a productive collaboration in research that soon snowballed into a delightful collaboration in life—and led her to change her name. Things always went so darn well when they were together: Even their conversation around the house about who was responsible for remembering where to find the car-washing sponge blossomed into a paper with Paula Hertel that introduced *transactive memory*—the study of how people remember things in relationships and groups by keeping track of who knows what.

South Texas was a hotbed of social psychology, where Wegner enjoyed a wealth of creative influences in the seventies and eighties. His talks with Robert Wicklund sparked his

realization that theory could be done, not just read about, and that research ideas are better gathered from life than from the *Journal of Personality and Social Psychology*. Vallacher visited on sabbatical, a year of such giddy fun that they were moved to spend several further years crafting the elegant, intricate, and widely overlooked theory of *action identification*. Chats with Jamie Pennebaker were magical, bringing Wegner to appreciate the role of the body in psychology—and the role of Jamie in thinking up amazing ideas. And there were all those happy evenings at Pepper's at the Falls in San Marcos, where social psychology got done al fresco with amigos Rich Wenzlaff, Dave Schneider, Ralph Erber, Bill Swann, and Dan Gilbert—a series of extraordinary collaborators who brought to the table gifts of careful thought, experience, enthusiasm, ambition, and wisecracks, respectively.

In the late eighties, he turned to the problem of thought suppression. Daughter Kelsey came along as a wonderful distraction, but he was ruminating on Dostoevsky's observation that it is impossible to stop thinking of a white bear. How could this be studied? Wegner, Schneider, Carter, and White (1987) did it by asking people to suppress the thought of a white bear in the lab—and found that those thinking aloud during this task typically mentioned the bear once per minute. A trifle obsessed with the topic of suppression himself, he quickly wrote *White Bears and Other Unwanted Thoughts* (Wegner, 1989) to outline implications of this finding for the psychology of obsession, anxiety, and depression. A theory of suppression effects hadn't surfaced yet—that was awaiting his 1990 move to the University of Virginia.

The nineties at the University of Virginia were joyous, with all the benefits of a top research institution plus brilliant colleagues Tim Wilson, Tom Oltmanns, Bella DePaulo, and Jon Haidt—and new daughter Haley adding to the warm Charlottesville family atmosphere. The theory of ironic processes of mental control rolled out in 1994—finally, a way of understanding why the white bear wouldn't leave. The paradoxical effects of self-control could be understood as the counterintentional influence of an active monitoring process that looks for unwanted mental states in order to control them but that, in so doing, tends to *cause* them. Work on the theory grew in interactions with Neil Macrae, Todd Heatherton, Roy Baumeister, and Laura Smart Richman, and ironic processes preoccupied him—until a 1996 sabbatical at the Center for Advanced Study in the Behavioral Sciences in Palo Alto provided a glorious year in the sun to think of something new. He learned immensely from fellow fellows Jerry Clore and Jon Krosnick, gazed out at San Francisco Bay past a pair of big feet on the desk, and started another science project: an attempt to understand conscious will.

That attempt was a theory of *apparent mental causation* (Wegner & Wheatley, 1999) that later got out of hand to become *The Illusion of Conscious Will* (Wegner, 2002). The idea was to understand how people experience conscious will

when their actions arise from deterministic processes of mind. Rightly perceived by many as an attack on free will, the book received wide attention and wider misinterpretation. However, it stimulated rewarding associations with Henk Aarts, John Bargh, Dan Dennett, Ap Dijksterhuis, Abby Marsh, James Moore, Carey Morewedge, Jesse Preston, Emily Pronin, and Betsy Sparrow and continues to perplex philosophers with its focus on empiricism. The ironic process theory mingled with issues of will in projects with James Erskine, Meg Kozak, and Sadia Najmi. Though oddly never a collaborator, Jonathan Schooler also must be mentioned here for his friendship and personal glow.

Wegner carried the science projects in 2000 to Harvard University, where he moved to join best friend Dan Gilbert in an attempt to recreate Pepper's at the Falls. They were joined by Mahzarin Banaji and Nick Epley, and the party continues. Wegner currently studies *mind perception*—how people differentially perceive human and nonhuman minds—with Kurt Gray and with current Weglab members Jeff Ebert, Andrea Heberlein, Amanda Ie, Anna Jenkins, Joe Paxton, and Adrian Ward. His research has benefited from regular support by the National Science Foundation and the National Institute of Mental Health. He is a fellow, usually jolly and sometimes good, of the American Psychological Association, the Association for Psychological Science, the Society of Experimental Psychologists, the Society for Experimental Social Psychology, and the American Association for the Advancement of Science. He is the 2011 recipient of the Association for Psychological Science William James Fellow Award and is now happy to stop talking about himself as though he were someone else.

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Setting Free the Bears: Escape From Thought Suppression

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A person who is asked to think aloud while trying not to think about a white bear will typically mention the bear once a minute. So how can people suppress unwanted thoughts? This article examines a series of indirect thought suppression techniques and therapies that have been explored for their efficacy as remedies for unwanted thoughts of all kinds and that offer some potential as means for effective suppression. The strategies that have some promise include focused distraction, stress and load avoidance, thought postponement, exposure and paradoxical approaches, acceptance and commitment, meditation, mindfulness, focused breathing, attention training, self-affirmation, hypnosis, and disclosure and writing. Many of these strategies entail thinking about and accepting unwanted thoughts rather than suppressing them—and so, setting free the bears.

Keywords: meditation, mental control, psychotherapy, thought suppression, white bears

Editor's Note

Daniel M. Wegner received the Award for Distinguished Scientific Contributions. Award winners are invited to deliver an award address at the APA's annual convention. A version of this award address was delivered at the 119th annual meeting, held August 4–7, 2011, in Washington, DC. Articles based on award addresses are reviewed, but they differ from unsolicited articles in that they are expressions of the winners' reflections on their work and their views of the field.

Wouldn't that be something rare? Just to let them go!
—John Irving, *Setting Free the Bears*

Life as a human has many splendors but at least one serious flaw: Being human means we must suffer from unwanted thoughts. We have thoughts we would love to wish away—from worries and pains to annoyances, fears, and even horrors—and these thoughts are all the more distressing because we know we often can't dispel them just by trying. Much of my research has been devoted to documenting this realization by exploring the persistence of unwanted thoughts in the laboratory. When people are simply asked to try not to think of something, they often report that the thought returns repeatedly. If thoughts are so difficult to dispel, the question then becomes: How do we do it? This article examines research on how we can escape unwanted thoughts. As it turns out, we can do this in large part by escaping thought suppression itself.

Most people know that thoughts are hard to suppress. This observation was captured in a Russian idiom noted by Dostoevsky and Tolstoy, for example—that it is difficult to stop thinking of a white bear. Wegner, Schneider, Carter, and White (1987) pursued this idea in an experiment by asking participants to think aloud while, indeed, trying not to think of a white bear. People did have difficulty suppressing this thought, and further, the thought tended to rebound with unusual frequency when the suppression attempt was rescinded. Although the extent of the effect varies in different experimental settings, the basic finding that people have difficulty with thought suppression has now been substantiated in a wide range of studies (see reviews by Abramowitz, Tolin, & Street, 2001; Beevers, Wenzlaff, Hayes, & Scott, 1999; Rassin, 2005; Wegner, 2009; Wenzlaff & Wegner, 2000). The return of suppressed thoughts has been found not only in simple self-reports but with measures of automatic cognitive accessibility (Najmi & Wegner, 2008a; Wegner & Erber, 1992), event-related brain potentials (Giuliano & Wicha, 2010), and brain activity localized by functional magnetic resonance imaging (Mitchell et al., 2007; Wyland, Kelley, Macrae, Gordon, & Heatherton, 2003).

The apparent inevitability of thought suppression failure suggests that it is useful to explore strategies people could use—in everyday life or in the context of psychotherapy—to escape their unwanted thoughts without recourse to thought suppression. Hopes of overcoming unwanted thoughts have fueled research traditions surrounding each of a series of *indirect strategies of thought suppression*—techniques that have been advocated by researchers or clinicians as potentially effective alternatives to direct suppression that may serve the same purpose. When “trying not to think about it” comes to mind, in other words, there may be something else to do that will have the indirect effect of achieving suppression. This review examines such alternatives to

thought suppression, focusing on nonpsychopharmacological approaches that have been tested in experimental settings or in clinical trials. The strategies reviewed include focused distraction, stress and load avoidance, thought postponement, exposure and paradoxical approaches, acceptance and commitment, meditation and mindfulness, focused breathing, attention training, self-affirmation, hypnosis, and disclosure and writing.

Focused Distraction

When people are asked to stop thinking about some particular thought, their commonly voiced strategy is simply to think of something else. This process of self-distraction can take different forms. Wegner et al. (1987) observed in think-aloud records that people usually change their chosen distraction target after each intrusion of the to-be-suppressed thought. A participant trying to suppress the thought of a white bear might try first to think about a lamp in the room, for example. On the return of the white bear to mind, the participant might then turn to thoughts of a book on the desk, or to a meeting planned for later in the day, or to a favorite pastime. This spontaneously generated strategy of *unfocused self-distraction* has been compared with an instructed strategy of *focused self-distraction* (Wegner et al., 1987, Experiment 2). People trying not to think of a white bear were instructed that if a white bear did come to mind, they were to think instead of a red Volkswagen. This instruction significantly dampened the rebound of white-bear thoughts in a subsequent period when participants were invited to think such thoughts freely. Such focused distraction has also been found to enhance the effectiveness of suppression even during the ongoing suppression attempt (Lin & Wicker, 2007). In addition, among individuals with obsessive-compulsive disorder, focused distraction leads to less distress than does suppression per se (Najmi, Riemann, & Wegner, 2009).

Unfocused self-distraction, in contrast, has its problems. The tendency to explore many distracters may tie the unwanted thought to other ongoing thoughts or moods and so promote its return when those thoughts or moods are again encountered (Wegner, Schneider, Knutson, & McMahon, 1991; Wenzlaff, Wegner, & Klein, 1991). Lack of focus and mind wandering are associated with unhappiness in experience sampling studies (Killingsworth & Gilbert, 2010), and one interpretation of this is that unfocused distraction causes negative affect. It may be that unfocused self-distraction induces experiences of racing thoughts and the feeling of a lack of control over thinking, and these could yield further distress (Pronin, Jacobs, & Wegner, 2008). The simple expedient of focusing the mind on one thing rather than letting it wander to many things may be a useful strategy for effective thought suppression. Although focused distraction may seem only a slight step removed

from direct thought suppression, it offers a critical fine-tuning of the effort that may increase its efficacy.

Stress and Load Avoidance

One might think that stressors or mental loads would act as distracters and so would move the person's attention away from thoughts that are unwanted. However, the more common effect of stress and load seems to be to take the person's attention away from the very strategies that might foster successful suppression (such as focused distraction). There is a general tendency for stress, load, and haste to undermine the person's attempts at self-control (Baumeister, Heatherton, & Tice, 1995). It is not just that these loads break down self-control, however—they can actually increase the incidence of the very thoughts or behaviors the person is trying to control.

The occurrence of mental load or stress enhances the ironic influence of automatic monitoring processes that are engaged during mental control (Wegner, 1994, 2009). When we try not to think of a white bear, after all, a part of the mind seems to be looking for that bear. A stressor or load encountered during thought suppression increases the influence of such ironic monitoring, thus increasing the cognitive accessibility of the suppressed thought and rendering it more likely to visit a variety of unwanted automatic influences on other thought and behavior. People trying not to think about a particular word under mental load, for example, become more prone to offer that word in a word association task than are people who are trying to think about that word (Wegner & Erber, 1992).

This means that the avoidance of stress and load will be general aids to the suppression of a thought. Mental loads and stressors—such as holding something in memory, keeping track of what is going on during multitasking, or even just responding to pressure to act quickly—can undermine attempted thought suppression. The finding that chronic thought suppression is associated with anxiety, depressed affect, and other reports of distress (Wegner & Zanakos, 1994) thus suggests that suppression may not just follow mental disorder but may sometimes precede and cause it (Najmi & Wegner, 2008b). People who have been given mental loads in experimental settings show general increases in the accessibility of thoughts of death (Gailliot, Schmeichel, & Baumeister, 2006), for example, suggesting that the avoidance of stressors or loads is an important tactic in the effort to overcome the most challenging unwanted thoughts. In addition, because suppression can itself promote stress (Erskine, Georgiou, & Kvavilashvili, 2010), there is the danger that stress could snowball whenever suppression is deployed. As a prophylaxis against unwanted thoughts of all kinds, it may be helpful to avoid mental loads and stresses.

Thought Postponement

Thought suppression usually involves an attempt to stop thinking of an item permanently. A white bear is to be vanquished from mind forever. However, many attempts to suppress a thought could be carried out effectively if they achieved only temporary success; the desire to keep an inappropriate remark out of mind, for example, could only be needed and active as long as there is an audience present to hear that remark. Perhaps thought suppression can be effective when it is undertaken less ambitiously—as an attempt merely to postpone the thought rather than to erase it.

Studies of the suppression of worry have examined the effectiveness of postponement by suggesting that people suffering from excessive worry try to put it off to a half-hour *worry period* (Borkovec, Wilkinson, Folensbee, & Lerman, 1983). Participants were asked to set aside a worry period for each day, monitor worry to postpone it until that period, and focus on present moment experience. This technique has been effective in some studies (Brosschot & Van der Doef, 2006), including one study with children that found a significant reduction in overall self-reported rumination (Jellesma, Verkuil, & Brosschot, 2009). The idea that one might achieve suppression in the long term by treating it as postponement in the short term is worth pursuing. It may be that eventual success in lasting suppression is more likely when people pursue the immediate goal of postponement, and so allow themselves the opportunity to entertain the unwanted thought in the future.

Exposure and Paradoxical Approaches

One set of strategies for thought suppression is not merely indirect but seemingly paradoxical—the tactic of intentionally thinking about or seeking exposure to the unwanted thought. In the literatures on fear, phobia, anxiety, and posttraumatic stress disorder, this tactic has been called *exposure*—with small or gradual doses of exposure known as habituation or desensitization (Wolpe, 1958) and a large dose called flooding or implosion (Boulougouris & Marks, 1969). Intentional exposure is also a key element of the therapy for unwanted thoughts that has been called paradoxical intention or paradoxical therapy. In this approach, “patients are encouraged to do or to wish for the very things they fear—albeit with tongue in cheek” (Frankl, 1991, p. 121).

The record of exposure therapies in the treatment of emotional disorders has been good, with particular success in the treatment of posttraumatic stress disorder (Cloitre, 2009). Intentional exposure combined with response prevention is an effective therapy for compulsive behavior (Abramowitz, 1996). There is also evidence that asking people to say an unwanted thought repeatedly aloud reduces their reports of discomfort (Dane, 2011). Paradoxical approaches that involve *prescribing the symptom* have been

used with some success in the treatment of obsessive thoughts (Ascher, 1989) and family problems (Shoham & Rohrbaugh, 2010) but have not found widespread application—perhaps because it is so difficult for both therapists and clients to adjust to the idea that an unwanted thought is somehow to be encouraged. This paradoxical position may be particularly difficult for a therapist to advocate, as the client is often highly motivated to continue suppression—and recommending that the client think about the unwanted thought and actively seek out reminders of it can seem not just paradoxical but cruel. This problem is particularly acute when the paradoxical therapy might include entertaining thoughts of suicide or self-harm.

Acceptance and Commitment Therapy

Intentional contact with an unwanted thought seems to require a personal decision, a point at which a choice is made to stop suppressing and start allowing the thought into mind. This choice is the focus of acceptance and commitment therapy, a therapeutic program organized around the idea of influencing the client to accept unwanted thoughts and emotions (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). The therapy attempts to guide people toward accepting experiences, such as unwanted thought or emotion, rather than avoiding them, and it recognizes that this is a difficult path that the person must make a serious commitment to follow. When months or years have been spent in attempts to suppress an unwanted thought, reversing field to embrace the thought and accept the accompanying emotions can be a challenging undertaking.

For this reason, recommendations of acceptance often suggest strategies for reducing the emotional impact of the thought by changing perspectives or adopting special approaches to the thought in the attempt to neutralize its affective charge. These strategies can be subtle, indirect, and even mysterious, and specific techniques for achieving acceptance vary widely among approaches. One study compared thought suppression to a creative instruction for acceptance (Marcks & Woods, 2005). In this instruction, clients attempting to accept a personal unwanted thought were told,

Struggling with your target thought is like struggling in quicksand. I want you to watch your thoughts. Imagine that they are coming out of your ears on little signs held by marching soldiers. I want you to allow the soldiers to march by in front of you, like a little parade. Do not argue with the signs, or avoid them, or make them go away. Just watch them march by. (Marcks & Woods, 2005, p. 440)

The study found that, compared with a baseline group simply monitoring the thought's occurrence, a group engaged in suppression reported increased distress in a subsequent period but that a group following these acceptance instructions showed decreased distress in this period.

It is difficult to fathom just what is happening to people when they imagine their thoughts marching out of their ears. Accepting unwanted thoughts may require some inventive maneuvers. In essence, acceptance seems to entail that the person attempt to do something while not feeling a sense of trying to do it—what Leary, Adams, and Tate (2006) called *hypo-egoic self-regulation*. It is as though undertaking acceptance as a conscious and deliberate choice makes it too difficult, so acceptance needs to be disguised in some way as a related project. Like the process of going unconscious in the performance of sports or music, techniques for allowing acceptance may depend on ways of influencing one's mind that are far from straightforward. It makes sense that some of these techniques for suppression would borrow from mystical or religious traditions.

Meditation and Mindfulness

Meditation is one practice borrowed from religious traditions that is often described as a recourse from unwanted thoughts. There are many definitions and techniques for meditation, so generalizations about the nature and effectiveness of meditative practices are elusive (Shapiro & Walsh, 1984). Some meditative practices (such as transcendental meditation) encourage focused attention on specific ideas or objects or sensations, whereas others (such as mindfulness meditation) endorse more open monitoring of experience (Lutz, Slagter, Dunne, & Davidson, 2008).

Many meditative techniques discussed as ways of overcoming unwanted thoughts draw on the idea of mindfulness adopted from Buddhist practice (as in, e.g., Thera, 1962). Such mindfulness is said to involve full or open attention. As with meditation more generally, the specifics of mindfulness are elusive, and the definition varies widely (Shapiro, Carlson, Astin, & Freedman, 2006). A frequent theme in this approach is a focus on attending to the present moment, on being here now as a way of quieting worries or insistent memories. The pursuit of mindfulness as a form of clinical treatment entails such intentional direction of the mind toward present experience (Philippot & Segal, 2009). There are other definitions of mindfulness that center more on creative interaction with problems (Langer, 1989), but the emphasis on mindfulness as present focus is a recurrent theme in techniques aimed at mental control (Dane, 2011).

An example of a meditative technique with potential for the control of unwanted thoughts is the meditation-based treatment known as the mindfulness-based stress reduction program (Kabat-Zinn, 1990). This technique includes sitting, lying, walking, or eating meditation and yoga. In an initial study, chronic pain patients who completed a 10-week program were encouraged to assume intentionally an attitude of detached observation toward pain (Kabat-Zinn, 1982). As in the case of meditation practices more gener-

ally, it is not clear exactly what practitioners are doing when they sit and become detached. However, significant reductions in pain report were observed, and reductions in further symptoms of stress have been found for other such programs (Teasdale, Segal, & Williams, 1995), with a meta-analysis of studies of the technique reporting broad effectiveness (Grossman, Nieman, Schmidt, & Walach, 2004).

Could meditation and mindfulness have such salutary effects because they enhance capacities for thought suppression or because they relax the striving to achieve it? It is difficult to tell just what the active ingredient might be when people pursue meditation or mindfulness programs with many facets. Is the essential component mental practice, focused breathing, the training of attention strategies or contemplation targets, physical practices such as yoga, or the pursuit of one of many correlated philosophies of living or thinking? Or could meditation and mindfulness be effective mainly because they involve practitioners in activities they come to believe will be effective—and that indeed are helpful because of placebo or suggestion effects? Just how meditation or mindfulness might operate to facilitate or obviate thought suppression remains an open question.

Focused Breathing

Attention to one's breathing can be a component of mindfulness or meditation practices, but its independent influence is only rarely evaluated. A focus on intentional breathing or attention to the breath is a common feature of these practices (e.g., Hanh, 2009), and this may have effects dissociable from those of any contemplative activity. The breath may serve as an effective focused distracter. Unlike simple focused self-distraction in which suppression is sought through concentration on some fixed idea or unchanging stimulus, the breath as a distracter is constantly changing and constantly responsive to the will. Breathing is a good thing, moreover, and reminding yourself of breathing is a way of remembering you are alive.

Not many studies have investigated breathing per se, but one study of smoking thought suppression by Salkovskis and Reynolds (1994) revealed that distraction in the form of a focus on breathing reduced smoking thoughts more than did suppression. Following up the study of focused breathing more broadly, Arch and Craske (2006) compared 15-minute inductions of focused breathing and periods of mind wandering or worrying and found that breathing led to lower negative affect and emotional volatility in response to a negative emotion-inducing slide show. When incarcerated prisoners in another study pursued meditation involving observation of breath and body sensation and acceptance of internal experiences—and did so for 8 to 10 hours daily for a 10-day course—they reported reduced levels of chronic thought suppression (Bowen et al.,

2006). More study of breathing effects could be useful, as there is the possibility that programs for manipulating attention to one's breathing could be helpful in promoting thought suppression.

Attention Training

Several of the methods of promoting suppression involve repeated practice. Repetition of suppression may foster the automatization of control processes and so reduce the activity of ironic monitoring processes that promote sensitivity to the unwanted thought (Wegner, 1994). This possibility has been tested in studies of attention training that focus not on concentration or attention toward a target (Tang & Posner, 2009), but on the training of attention away from a target. In one study, for example, attention training for suppression involved asking people to respond as soon as possible when a target letter appeared on a screen that had just shown a face with a neutral expression or an expression of disgust. Participants were not told the contingency, but training trials involved 80% responding to the neutral (as opposed to the disgust) face—thus training attention toward the neutral face (Amir et al., 2009). This study found in a randomized double-blind placebo-controlled trial that people with social phobia who underwent attention training had reduced symptoms in a four-month follow-up.

Similar findings by others (Schmidt, Richey, Buckner, & Timpano, 2009) suggest that attention training for suppression may have generalizable effects that could reduce the recurrence of anxiety-producing unwanted thoughts. Attention training may be a way of enhancing the spontaneous self-distraction process in the avoidance of depressing thought as well (Joormann, Hertel, LeMoult, & Gotlib, 2009). However, it remains to be determined whether attention training aimed at the suppression of a particular thought facilitates the subsequent suppression of other unrelated thoughts.

Self-Affirmation

Another indirect path to thought suppression may be found in *self-affirmation*, the psychological state that follows the expression of personal values and personal worth. The process of self-affirmation involves seeing ourselves as “adaptively and morally adequate, . . . competent, good, coherent, unitary, stable, capable of free choice, [and] capable of controlling important outcomes” (Steele, 1988, p. 262). Experimental manipulations of self-affirmation typically call on people to describe themselves in positive ways and as exemplifying values they hold dear. The state of mind induced by this activity has been found to reduce rumination about incomplete goals (Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999), which may be induced by the suppression of thoughts about the incomplete goals (Martin & Tesser, 1989). In research addressed to thought suppres-

sion in particular, it has been found that receiving positive personality feedback reduces rebound of suppressed prejudices (Koole & Van Knippenberg, 2007). It is not yet known whether self-affirmation can be of service in other thought suppression enterprises, but this research opens the possibility that self-affirmation could be an indirect aid toward this end.

Hypnosis

There is good evidence that hypnosis can serve to enhance the success of mental control (Oakley & Halligan, 2009). People who have been selected for their high level of hypnotic susceptibility are capable of mental control under hypnosis that allows influence over some processes that are usually understood as automatic and not open to intentional control under other conditions (Hilgard, 1992; Wegner, 2002). Bowers and Woody (1996) found that highly susceptible people directed under hypnosis to forget the name of their favorite car showed reduced recall of the car and reduced intrusions of thoughts of the car. These measures are potentially open to voluntary control, of course, and so might have been faked by susceptible participants. Subsequent studies examining participants under mental load have shown similar effects of hypnosis on suppression success (King & Council, 1998); however, it is important to note that these studies used tasks that assessed automatic access rather than consciously controllable reports (Bryant & Wimalaweera, 2006). It appears, then, that hypnosis may be an avenue for effective thought suppression. The drawback of this approach, of course, is that it hinges on individual differences in hypnotic susceptibility and so can be useful only for those who are among the more susceptible.

Disclosure and Writing

Perhaps the best known therapy for unwanted thoughts is Freud's *talking cure*, the disclosure of unwanted thoughts to a trusted other. The influence of disclosure on psychological and physical health has been documented extensively by Pennebaker (e.g., 1997). The technique usually calls on people to spend several sessions over the course of multiple days writing down or otherwise revealing their very deepest thoughts and feelings. Writing in this way has a variety of positive effects on health, for example, yielding reductions in viral load among patients with human immunodeficiency virus (Petrie, Fontanilla, Thomas, Booth, & Pennebaker, 2004). Even e-mail emotion expression can have positive health effects (Sheese, Brown, & Graziano, 2004). More to the point of the present analysis of thought suppression, there is evidence that expression of any thought lessens its recurrence (Sparrow & Wegner, 2006) and that emotional writing in general lessens the recurrence of subsequent unwanted thoughts (e.g., Segal, Chatman, Bogaards, & Becker, 2001).

A burning question that remains in the study of disclosure and writing is just what type of disclosure might be most helpful in discharging the influence of thought suppression. It could be that effective disclosure is dependent on what is said, how it is said, and to whom it is said (Pennebaker, 2007). It may also be that effective disclosure has to do with developing a way to think through and tell the story of events. Narrative exposure therapy is based on this idea, for example, as it aims to help people think through events that underlie unwanted thoughts through a process of exposure that encourages organizing the memory into a coherent story (Robjant & Fazel, 2010). The development of a script or sequence may offer ways to rehearse events that put together the otherwise discrete unwanted thoughts into an understandable and accessible structure (Wegner, Quillian, & Houston, 1996). Coming to terms with unwanted thoughts may require inventing ways to bring them back into one's life story.

Afterword

When I first undertook the study of thought suppression, I had no idea it would become a lifelong campaign. However, in years of giving talks about research on the difficulty of suppression, I have found that many people during the question session wanted one more step. "Yes," they would say, "we now recognize that it is difficult to suppress a thought. We get that. But so then how do you do it?" This article is my current collection of answers to the question based on research conducted by experimental and clinical psychologists.

The techniques and therapies explored here vary from the well established to the experimental, but it should be remembered that, on balance, they lean toward the experimental. These techniques have only seldom been compared head-to-head in research, and the study of many of them—although it is sorely needed—is not a mature branch of psychological science. What this means is that these assembled solutions for unwanted thoughts should be taken as hypotheses and possibilities rather than as trusty remedies or recommendations. I offer them in hopes that further research and exploration will discern whether they are indeed effective and that, in the interim, they may be useful to those who are trying to overcome unwanted thoughts, both in research and in everyday life. The project of setting free the bears, after all, is an experiment we each conduct every day.

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