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## Origins of Ruminative Thought: Trauma, Incompleteness, Nondisclosure, and Suppression

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The purpose of this paper is to discuss theories of the origin of ruminative thought. We begin by providing a working definition of rumination, separating rumination from other forms of cognitive activity and distinguishing ruminations from ordinary memories. Then, we review what we believe are the major categories of theory that attempt to account for the existence and nature of rumination. These include theories of traumatization, incompleteness, nondisclosure, and thought suppression. Ruminations may originate for a number of reasons, but it seems they may continue because of our attempts to control them. Evidence from studies on thought suppression suggests that the suppression of unwanted thoughts may in fact fuel the very emotions and thoughts we are trying to avoid. Thought suppression may set up a state in which we not only increase the amount we think about an unwanted thought, but potentially also sharpen our emotional reaction to those thoughts.

*Zahir* in Arabic means "notorious," . . . and the people use it to signify "beings or things which possess the terrible property of being unforgettable, and whose image finally drives one mad (Jorge Luis Borges, *The Zahir*)."

We often think and rethink the same thoughts, and this is not at all unusual. Mundane and benign thoughts may repeat themselves in consciousness throughout the day, causing little disturbance and demanding little attention. Repeated thoughts are useful and important to us, after all, as they keep us focused and concerned when we might otherwise be scattered and impulsively attentive to whatever parade goes by. At the same time, however, repeated thoughts can be disturbing and intrusive. When repeated thoughts unexpectedly and automatically dominate our awareness to the point that they become noticeable and bothersome, they take on a different character. They become ruminative thoughts—thoughts that repeat too much.

What makes us susceptible to the repeated retrieval of thoughts from memory? Why do we repeatedly recall some event that happened in our

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childhood as if it were yesterday, while at the same time we find it difficult to remember what really did take place yesterday morning? Whether they are benign memories of a fourth grade teacher or of kissing a first love, or traumatic memories of a car accident or losing a loved one, when particular memories keep coming back we begin to wonder why. Why do we ruminate? Why does the mind fall prey to these intrusions? The purpose of this paper is to discuss theories of the origin of ruminative thought.

We will begin by providing a working definition of rumination, separating rumination from other forms of cognitive activity such as obsessions, worry, and anxiety disorders, and distinguishing ruminations from ordinary memories. Then, we will review what we believe are the major categories of theory that attempt to account for the existence and nature of rumination. These include theories of traumatization, incompleteness, and nondisclosure. We close by adding our own perspective on rumination, the suppression theory. We outline this last argument using a body of research that has come from studies of instructed thought suppression.

#### *Definition of Rumination*

Ruminations have been described as conscious thinking directed toward a given object for an extended period of time (Martin & Tesser, 1989). In the past, ruminations, which include the subclass of intrusive thoughts, have been grouped under the rubric "cognitive factors in anxiety" (Tallis, Davey, & Capuzzo, 1994), along with obsessional thoughts (Rachman & Hodgson, 1980), negative automatic thoughts (Beck, 1976), and worry (Borkovec, Robinson, Pruzinsky, & Depree, 1983). While ruminations share similarities with these other types of cognitive activities, such as their automatic and intrusive nature, they differ in at least one important way—ruminations are usually thoughts about events that have occurred in the past. Ruminations contain an irreversible or irrevocable quality, and at times an even pointless quality as well, because they are typically about events that cannot be altered or changed.

It is the automatic and intrusive nature of ruminations that separates them from ordinary memories. Unlike information that simply resides in memory to be recalled when it is needed and then stored away again not to return until another need occurs, ruminations intrude—anytime and anywhere. Ruminations are not thoughts that are chosen to be remembered, but memories that must be remembered. This urgency and driven quality makes ruminations less pleasant than daydreams; and because most ruminations are oriented toward the past rather than solving problems for the future, they are less practical than worry. The question of interest, then, is why we would have repeated thoughts that are not particularly pleasant or useful. We begin our discussion of theories

of rumination by examining the idea that these thoughts are prompted directly by an emotional stimulus, and then we move to ideas centering on the person's more extended responses to such emotional events.

#### *Trauma Theories*

A common explanation for why ruminations occur is that they are the result of some traumatic or unpleasant event. From this perspective, "an experience may be so exciting emotionally as almost to leave a scar on the cerebral tissues" (James, 1890, p. 670), and ruminations are the permanent reminders of the traumatic events that have taken place. War veterans who experience flashbacks and survivors of vicious attacks are examples of this phenomenon. The basic notion here is that there is something about the initial encoding or perception of an emotional event that increases the likelihood that memories of the event will be retrieved repeatedly in the future (e.g., Horowitz, 1976).

Survivors of traumatic occurrences often have "flashbacks" of disturbing events. Laub and Auerhahn (1993), for example, tell of a concentration camp survivor who at the age of 14 spent his first year in Auschwitz with his father. During this year, the father and son worked side by side. This gave the son a sense of protection and security. At some point, though, the father was selected for gassing. That moment is still frozen in the son's memory, some 50 years later. "The moment of their separation—the father being led away, put on a truck, and the truck then setting off, with the boy remaining behind helpless and grief-stricken—has remained an ever-present, painful memory from which the son cannot find comfort" (p. 295).

Experimental studies have yielded some results consistent with the idea that traumatic events prompt rumination. Subjects who are shown an emotion-producing film that could be thought of as a "mini-trauma" exhibit more intrusive, repetitive thoughts about the film afterward (Horowitz, 1975). Quantitative measures of conscious experience support a traumatic theory of rumination (Christianson, 1992). The key question, then, is how this effect occurs.

Traumatic experiences may induce rumination because the affect associated with the event somehow creates an exceptionally strong memory. In their study of "flashbulb memories," for example, Brown and Kulick (1977) developed this idea in the context of an evolutionary explanation for the memory-emotion relationship. According to their theory, unexpected and highly arousing events create highly vivid and detailed memories of unusual endurance as a means for future safety. Correlational studies support this theory by showing a strong relationship between the vividness with which an event is recalled and the

emotionality of the event at the time it occurred. The stronger the emotion, the greater the vividness of subsequent recall (Reisberg & Heuer, 1992). It has not been shown, however, that the survival value of the emotion is itself related to memory strength.

Neurobiological research provides clear evidence that emotions affect memory through an influence on brain chemistry (e.g., Gold, 1992; Gold, 1995; McGaugh, 1992). According to Gold (1992), stressful events cause the release of epinephrine, or adrenaline, which in turn causes an increase in circulating glucose levels. Glucose has been shown to enhance memory (Gold, 1995). When animals are taught particular discriminations under emotion-producing conditions (such as electrical shock), for example, their epinephrine and glucose levels increase and their learning of the discriminations is improved as well. Therefore, an event that evokes rage, panic, fear, or other intense emotions may be more memorable because it is accompanied by neurochemical effects that enhance learning.

Other support for a traumatic theory of rumination comes from research on individuals who suffer from post-traumatic stress disorder (PTSD). According to the American Psychiatric Association (1994), in order to be diagnosed with PTSD, there must be evidence of the occurrence of a traumatic event (e.g., natural disasters, murder, rape, combat, accidents, or terrorism) coupled with intrusive thoughts about some aspect of the stressor experienced. In fact, Horowitz, Wilner, Kaltreider, and Alvarez (1980) have found as many as 90% of those questioned with PTSD experienced moderate ruminations or preoccupations during the week prior to their survey.

Traumatization theories propose that intrusive thoughts occur because of an immediate reaction to some initial event. However, it has been noted that an event that causes one person to ruminate does not affect another person in the same way, nor will the same event elicit the same response at two different times (McIntosh, Harlow, & Martin, *this issue*). In fact, some traumatic events are not more memorable, but are in fact repressed for long periods of time (e.g., Loftus & Kaufman, 1992). What can account for this discrepancy?

One possibility is that it depends on the duration of the traumatic event — whether it was a long-standing, repeated event versus a quick trauma (Terr, 1990). However, Loftus and Kaufman (1992) point out that this hypothesis fails against the fact that many unanticipated traumas do not reliably produce accurate memories. It is apparent, then, that attributing rumination to the simple intensity or duration of an emotional event does not suffice as an explanation. There seem to be other factors that may influence rumination, one of which involves the prior psychological or motivational state of the person who experiences a trauma.

### *Incompleteness Theories*

This approach to rumination is based on the idea that an emotional event occurs because of the attainment, or nonattainment, of goals (e.g., Martin & Tesser, 1989). According to this view, ruminations are the mind's attempt to continue an intended behavior. Ruminations do not occur because of the emotional content of a traumatic event per se, but because the trauma causes an interruption in reaching higher-order goals. For instance, failing an exam or losing a loved one may cause ruminations because these events interrupt a goal (i.e., passing a class or maintaining a relationship), and the incompleteness spurs further thinking about goal achievement.

Martin and Tesser (1989) suggest that a Zeigarnik effect (1927/1938) is a model for the motivational component of rumination. According to this theory our thoughts, feelings, and actions are directed by goals or intentions (cf. Klinger, 1975; Lewin, 1954). We strive for these goals until we either achieve them or we decide to abandon them. When we fail to attain these goals, a "Zeigarnik charge" is activated — a drive to complete an interrupted task. This charge is usually accompanied by negative affect and rumination which continue until we either reach the goal or we disengage from it. From this point of view, our initial intention to do something creates a tension system that responds to any blockage or redirection of the intention with thoughts and emotional responses aimed at reinstating the intended activity.

This notion also follows from Mandler's (1975) theory of emotion. His theory holds that the negative affect associated with blocked goals is caused by the interruption. Interruptions cause arousal in the autonomic nervous system (ANS). Following arousal, we focus our attention on the ANS discharge and look for completion of that action. Completion, in turn, should dissipate the ANS arousal. Therefore, when our goals are blocked, the simplest response is to repeat the same behavior. After completion, ANS arousal should disappear along with the negative affect. The Zeigarnik approach is also related to Klinger's (1978) theory of current concerns. In his view, incomplete tasks frequently come to mind and are in fact the predominant content of consciousness. Such current concerns may include unfinished actions, problems that need to be solved, emotional topics that continue to give rise to emotional states, or other thoughts that represent projects or future issues.

Martin and Tesser (1989) add the interesting contention that the unmet goals that prompt rumination are not always open to introspective awareness. According to their formulation, we may not be aware of an unattained goal which may be driving the rumination. Because goals may function at different levels in a hierarchy, we are not always aware of the goal at one level, while we

are conscious of the goal at some other level (cf. Vallacher & Wegner, 1987). What this means, then, is that we may be quite unconscious of the unfinished business that is driving the ruminations, despite our painfully clear consciousness of the ruminations themselves.

The goal-fulfillment theory is closely related to the more general notion that rumination may be involved in the search for the meaning of past events. As humans, we search for meaning in our lives (Baumeister, 1991). One of the goals of rumination seems to be to find meaning in a traumatic event (e.g., Horowitz, 1976; Lehman, Wortman, & Williams, 1987; Silver, Boon, & Stones, 1983). Faced with events that shatter their perception of a just or sensible world, individuals may ruminate to find reasons why certain events have happened to them. The person who has had his or her house broken into may ask, "Could I have avoided this?" The victim of incest may ask, "Why me?" Ruminations are thus a way of attempting to find answers to life's difficult questions.

It is not always obvious what it means, however, to "find meaning." Analyses by Horowitz (1976) and by Silver et al. (1983) suggest that ruminations occur until we find meaning, but they offer various interpretations of how such meaning arises. For instance, when we suffer a loss, we may search for ways the loss could have been avoided (Lehman et al., 1987) and learning of these might provide a meaningful context for the loss. Alternatively, we might seek attributions for the loss, and simply arriving at some causal understanding could amount to "finding meaning." Having a clear cause in mind, after all, helps to put order and rationality back into our lives. Alternatively, it might be a particular kind of attribution that would be most helpful. Perhaps it would help if we found that we were responsible for the problem (Bulman & Wortman, 1977), or it might be useful if we could see ourselves as free of blame (Taylor & Brown, 1988).

There is some empirical evidence for the claim that ruminative thoughts are used as a way to search for meaning. For instance, Silver et al. (1983) asked survivors of incest the frequency with which they experienced ruminations about their incestuous encounters (i.e., how often memories, thoughts, or mental pictures of the incest experience popped into their minds) and the extent to which such ruminations were intrusive and disrupted other activities. They found that the more active the search for meaning, the more respondents reported recurrent, intrusive, and disruptive ruminations about the incest experience.

Searching for meaning following a traumatic occurrence, or simply trying to move on after losing a loved one, often takes the help of a support group. Our next perspective focuses on the role of social support in avoiding unwanted ruminations.

### *Nondisclosure Theories*

A third perspective on ruminations is that they occur because of a failure to talk about or disclose traumatic events (e.g., Foa & Kozak, 1986; Freud, 1914/1958; Lindemann, 1944; Pennebaker, 1985; Stiles, 1987). As noted above, ruminations often occur following traumatic events. We think and stew, trying to make sense of the unsensible. Based on a cathartic view of expression, unless we talk about and release these thoughts, they will continue. Like a pressure cooker that needs to let off steam, it is beneficial, if not necessary, to express our thoughts.

Therapists since Freud (1914/1958) have suggested that people should talk about their emotional or traumatic experiences as a means of reducing long-term emotional disturbance. Empirical evidence supports this view (Pennebaker, 1989). Pennebaker (1985) suggests that when we are confronted with traumatic events that are not "acceptable," we are not open to discuss them to the same degree that we might discuss ordinary events. Victims of abuse or incest may not be able to discuss the event with anyone, and victims of events that are not socially taboo may still find it difficult to find a receptive audience. Pennebaker suggests that, in such cases, the act of not discussing or confiding the event with another may be more damaging than having experienced the event itself.

Support networks seem to play a valuable role in helping a person to "work through" emotional pain. For instance, Pennebaker and O'Heeron (1984) have found that spouses who discussed the death of their loved ones with friends and family were less likely to ruminate about the death later. Nolen-Hoeksema, Parker, and Larson (1994) found that people with poorer social support networks report more ruminations than do people with better ones. Silver (1994) presents convincing evidence that people who cannot share their emotions with others because the others are unresponsive come to ruminate about those emotional topics.

However, disclosing traumatic events does not seem to reduce the occurrence of ruminations in all cases. For example, Terr (1983) did a longitudinal, clinical study on the children involved in the Chowchilla kidnapping. In 1976, three kidnappers abducted 26 children and their bus driver at gunpoint, drove them around for about 11 hours, and buried them alive for 16 hours in a tractor-trailer. Two of the kidnapped boys dug the group out. Terr discovered 4 years following the traumatic event that the few children whose parents encouraged family discussions about the experience were not spared the effects of the trauma. Nor were these children's clinical conditions milder 4 to 5 years later.

These findings suggest that there may be more to alleviating unwanted intrusions than to talk about the unwanted feelings. Lane and Wegner (in

press) offer a different spin on the relationship between intrusive thoughts and disclosure. They suggest that intrusive thoughts occur not from the inability to disclose, but from the psychological mechanisms involved in the attempt to keep things secret. Lane and Wegner (in press), discovered, for instance, that when subjects were asked to keep secrets, they experienced increased intrusive thoughts about the unwanted topic. In addition, intrusive thoughts were also positively correlated with attempts at thought suppression. This finding offers yet another possible link into the mechanism behind ruminations. It may be that the individual's mental control activities following an emotional event create and maintain ruminative thought.

### *Suppression Theory*

In each of the three previous views, emphasis has been placed on a traumatic occurrence as the driving force behind ruminations. Trauma theories propose that traumatic events cause an emotionally intense reaction that produces intrusive thoughts. Incompleteness theories suggest that traumatic events destroy the sense of order in our lives, and ruminations occur as a motivated attempt to put the order back. And, finally, nondisclosure theories maintain that traumatic events must be revealed to others, or they continue to burn in the individual's mind in the form of unwanted intrusive thoughts.

We propose an alternative mechanism for intrusive thoughts that focuses not on the traumatic occurrence, but on how people react to emotional thoughts that return to mind following such an occurrence. Specifically, we suspect that ruminations occur not only because of the traumatic event itself, but as a result of the fact that in the aftermath of the event, people may try not to think about the event or its implications. Thought suppression ironically sets up an automatic search for the very thing the person is trying to forget (Wegner, 1992, 1994). Instead of being able to bury the unwanted thoughts surrounding a traumatic event, suppression makes these thoughts more accessible, even hyperaccessible. Eventually, these unwanted thoughts and ideas come to intrude repeatedly and uncontrollably. It seems that the harder we try to push unwanted ruminations away, the more likely we are to think about them.

*The aftermath of a traumatic event.* Faced with the unpleasant and disturbing thoughts that accompany traumatic events, it is common to try to put the thoughts out of mind. In fact, the use of thought suppression as a response to psychological discomfort is widely documented (e.g., Horowitz, 1976; Pennebaker, 1988; Silver et al., 1983; Terr, 1983; Wegner, 1994; Wegner & Pennebaker, 1993). Avoidance of thoughts about traumatic occurrences is seen as a means of escaping the negative emotions that accompany the thought.

However, complete avoidance of unwanted thoughts is usually unsuccess-

ful. Sooner or later, the unwanted thought returns, and we find ourselves needing to suppress again. Eventually, we end up falling into a cycle alternating between periods of rumination and periods of intentional suppression (Wegner, 1992, 1994). Horowitz (1976) says that this cycle is common following stress, and has named the two poles the "intrusion state" and the "denial state." To understand why we fall into this cycle, it is important to look at what happens when we try to suppress an unwanted thought.

*White bears and the rebound effect.* Some of the initial work on the effects of suppressing an unwanted thought comes from the simple instruction, "try not to think of a white bear" (Wegner, 1994; Wegner, Schneider, Carter, & White, 1987). People who are asked not to think about a target thought, such as a white bear, are usually unsuccessful. In addition, people who are asked to think about the target thought after initially suppressing that thought will later think about it more than will people who never suppressed the thought to begin with. These two findings, the fact that suppressed thoughts are hard to keep out of mind and that thought suppression makes us think more often about a thought once suppression is terminated, are keys to understanding why ruminations occur.

Let us first look at why it is so difficult not to think of something. Suppressed thoughts are hard to keep out of mind because of the interplay between two cognitive processes instituted by the intention to suppress. These include a controlled distracter search and an automatic target search (Wegner, 1992). The first process, the controlled distracter search, is a conscious, attention-demanding search for thoughts that are not the unwanted thought. The second process, the automatic target search, is a relatively less attention-demanding process that searches for any sign of the unwanted thought. During suppression, the conscious search for distracters draws upon the individual's perception and memory to replace the unwanted thought with another thought. The automatic target search process keeps watch, meantime, for any occurrences of the target, so that the conscious search for a distracter can be reinstated if the target returns to mind (Wegner, 1992). What this means, though, is that the suppressed thought becomes the focus of an intensive automatic search process that operates without conscious attention. This process can make the unwanted thought ironically return to mind, especially when the search for distracters is sidetracked.

Evidence for such hyperaccessibility of suppressed thoughts comes from research by Wegner and Erber (1992). In their study, subjects suppressing neutral thoughts showed signs of automatic access to those thoughts. Using the Stroop (1935) paradigm to measure the hyperaccessibility of suppressed thoughts, Wegner and Erber found that the reaction times for naming colors of words were greater when subjects were asked to suppress thinking of the word and under conditions of cognitive load than when there was no load or when

subjects were asked to concentrate on the word. These results suggest that thought suppression promotes an almost effortless cognitive access to the suppressed thought. In a sense, we end up placing a marker on the very thought we are trying to bury.

In addition to the fact that suppressing a thought leads to the hyperaccessibility of the unwanted thought, it also seems that thought suppression makes us think of an unwanted thought more following suppression. This *rebound effect* was demonstrated by Wegner et al. (1987). They suggest that the rebound occurs because people distract themselves during the process of thought suppression by thinking about a variety of different distracting thoughts. Each time the suppressed thought returns, people try again to distract themselves, often-times picking another distracter. Ultimately, each of the distracters used becomes associated with the unwanted thought and serves as a reminder when suppression is later stopped. It may be that when we try desperately to not think of something, we end up creating associations between the unwanted thought and all the various distracters, which in turn serve as cues to remind us of the unwanted thought at a later time.

Recent research by Macrae, Bodenhausen, Milne, and Jetten (1994) has revealed that suppressed thoughts continue to be highly accessible, even following suppression during the rebound period. This finding suggests that there may be some connection between the hyperaccessibility and rebound effects, but further research will be necessary to establish the nature of this relationship. Suffice it to say, at this point, that the two observed effects—the hyperaccessibility of suppressed thoughts and the suppression-induced rebound effect—serve as a potential model for the creation of ruminative thought in everyday life. Whereas thought suppression may be the coping strategy of choice, it seems in actuality that it is difficult to sustain; it makes us think of the unwanted thoughts rather than truly eliminate them and, in the long run, may ironically fuel the very ruminations it is meant to undermine.

*Emotional reactivity.* Fuel for ruminations may not always be cognitive. Wegner and Gold (1995, Study 1) examined the effect of thought suppression using a noncognitive measure, emotional reactivity. They explored whether the suppression of emotional thoughts (e.g., a lost love) would promote an exaggerated emotional reaction when those thoughts returned. Subjects were asked to think about an old flame for a period of 8 min (half of the subjects were asked to think about a still desired relationship—a hot flame; while the other half thought about a relationship no longer desired—a cold flame). Subjects were then asked not to think about their old flame, or not to think about an irrelevant target (the Statue of Liberty). In a subsequent expression period, subjects were instructed to think about their old flame again.

The results revealed an interesting discrepancy. Using physiological re-

sponsiveness as the measure of emotional reactivity, a rebound effect was found. Subjects who were prompted to suppress the thought of their still-desired old flame showed a continued elevation in skin conductance level (SCL) on thinking about the flame at a later time. Subjects who suppressed the comparison target (the Statue of Liberty), along with subjects in the cold flame conditions, showed a decreased SCL as time went by. However, based on the verbal report data, the rebound effect only occurred for the cold-flame subjects, not for the hot-flame subjects. For the people who still desired the old relationship, suppression did not induce a cognitive preoccupation with the old flame.

The results of this study suggest that the suppression of thoughts of an old flame may promote the persistent psychological presence of the old flame in the person's mind, depending on the status of the old flame. For individuals who were not particularly attached to their old flame, suppression created a *cognitive rebound effect*, a later tendency to dwell on thoughts of the old flame when expression of these thoughts was invited. This echoes the suppression-induced rebound effect observed by Wegner et al. (1987). However, for individuals who still desired a relationship with their lost love, suppression did not induce a preoccupation with the old flame measurable as an increased tendency to talk at length about the person later on, but rather created the inclination toward an enhanced electrodermal response during the later opportunity to talk, or an *emotional rebound effect*. This emotional rebound effect was not observed among subjects who merely suppressed thoughts of the Statue of Liberty, nor was it present among subjects for whom the old flame was no longer attractive.

Wegner and Gold (1995, Study 2) conducted another study to include the same instructions for suppression of the old flame that were used in the previous experiment, but now to be compared with the influence of direct instructions to *think* about the old flame in the manipulation period. Subjects were again asked first to think about an old flame for a period of time; then, half of the subjects were instructed to continue thinking of their old flame, while the other half were instructed not to think about their old flame. In a final expression period, all subjects were again asked to think about the old flame.

Results revealed the same discrepancy that occurred between the verbal report data and the physiological data in the first study. Subjects who were in the hot-flame condition who suppressed the thought of the past relationship showed a continued elevation in SCL on thinking about the flame at a later time. Their SCL was elevated as compared to that of subjects in the cold flame conditions, or of subjects who had expressed their thoughts of the old flame throughout, who showed a decrease in physiological responsiveness over time. Once again, the verbal report data did not indicate a cognitive rebound following suppression for subjects who were in the hot flame condition.

whereas such an effect was found for those in the cold flame condition.

The results of these two studies suggest that ruminations may at times be fueled by more than cognitive processes. Emotional reactivity may play a role in ruminations. It may be the unexpected intrusiveness of the emotional thoughts that may further amplify their emotion-producing power. Although the person may not think of the hot flame at very great length after suppression, for example, it still may be that when these thoughts do return, they occur with such unexpected force and suddenness that they generate a stronger emotional reaction than thoughts that are encountered intentionally. A few intrusions would be all that is needed to fuel the emotional reaction.

Support for such an intrusion effect has been shown by Wegner, Shortt, Blake, and Page (1990). Subjects in these experiments were asked to give continuous verbal reports while thinking about either an exciting topic (i.e., sex) or a less exciting topic (i.e., dancing). During this time, SCL was monitored continuously. It was found that trying *not* to think about sex, as did thinking about sex, elevated SCL compared to thinking or not thinking about dancing. However, the most interesting finding was that each time an intrusion of the exciting thought entered the subject's mind during suppression, it introduced a further surge in SCL.

Reanalyses of the Wegner and Gold (1995) data have been performed that extend their conclusions in interesting directions. Wegner and Zanakos (1994; Study 6) examined whether chronic thought suppression inclines individuals toward reactivity to emotional stimuli, by analyzing additional data from Wegner and Gold research. In their reanalysis, Wegner and Zanakos sought to test whether high chronic thought suppressors show an increase in arousal to emotional stimuli (a dishabituation response), rather than habituation. Using scores on the White Bear Suppression Inventory to measure chronic thought suppression, Wegner and Zanakos found that subjects high in thought suppression showed increased electrodermal response, even in a second period of talk about the old flame, whereas those lower in thought suppression appear to have habituated to thoughts of the hot flame. These findings suggest that people who chronically suppress thoughts may unwittingly make themselves more emotionally responsive to reminders of those thoughts.

In another reanalysis of these data, Wegner, Lane, and Dimitri (1994) looked at the covariation between an individual's attempt to keep a past relationship secret and the person's current preoccupation with that relationship. They found that these variables were linked at the individual level. Obsessive preoccupation with a past relationship significantly predicted reports that the relationship was secret. Secrecy seemed to prompt the thought of the past relationship to return to mind, along with a continued search for why the relationship ended and a tendency to stop thinking about the old flame.

## Conclusions

Taken together, the studies on thought suppression suggest that the suppression of unwanted thoughts may in fact fuel the very emotions and thoughts we are trying to avoid. Thought suppression may set up a state in which we not only increase the amount we think about an unwanted thought, but potentially also sharpen our emotional reaction to those thoughts. Research on these phenomena is still under way, and the precise relations between the emotional and cognitive effects of suppression are not fully worked out. We can conclude at this time that responding to unwanted thoughts with suppression under instructions in laboratory studies can make people develop minor ruminative symptoms. Such findings suggest a new way to conceptualize the production of ruminations in everyday life.

Although we have discussed four different perspectives for why ruminations occur, these should not be considered mutually exclusive or competitive positions. Good evidence exists in each realm, and it is probably more accurate to think of ruminations occurring because of some interaction of the four theories. The initial trauma, the need for completion, the drive for disclosure, and the negative consequences of thought suppression may all play a role in promoting intrusive thoughts.

One way to try to integrate these views is to explore the roles of each in a general thought suppression model. (You knew we'd say this, didn't you?) For instance, while the emotionality of a trauma may provide the initial spark for intrusive thoughts, it may be the emotional unpleasantness of the first few returns of traumatic thoughts that initiates a response of thought suppression; suppression, then, may provide the fuel for continued intrusions. In this view, a trauma may well have serious influences on memory and rumination, but the issue of long-term adaptation to the trauma is a matter of the individual's suppressive or nonsuppressive response to the initial returns of the traumatic thoughts and emotions. Flashbacks and ruminations occurring years after a trauma may no longer be traceable to the initial memory trace of the trauma, and may instead be the result of cycles of suppressive responses to the recurrence of these thoughts.

Thought suppression may also provide insight into the way incompleteness promotes rumination. It could be that the Zeigarnik effect itself is a form of response to suppression. When a person is kept from completing some goal or intention, the state of tension that is produced may not result from the strength of the original motivation, but may instead arise from the act of suppressing thoughts about that goal or intent. The desire for meaning or for completion that seems to be disturbed by the occurrence of a trauma could, perhaps, be another way of describing the turmoil that arises when one is forced by circumstances to stop thinking about what one has dearly wanted. In this

view, it is the suppression of thoughts about goals that makes incompleteness so aversive. By the same token, then, any approach that lessened the desire for suppression or the use of suppressive strategies in the adjustment to the failure to attain a goal would be of potential therapeutic value.

It is also possible to find a role for suppression in the mechanisms underlying the role of disclosure in rumination. After all, it would seem that one highly effective way to prevent disclosure of thoughts to others would be to avoid thinking about them. It may be that in the desire to avoid taboo topics or to keep secrets about oneself and one's problems, people commonly resort to thought suppression as a strategy. To the degree that disclosure is an effective way to eliminate rumination, this "talking cure" may come from the release of thought suppression.

Ruminations may originate for a number of various reasons, in sum, but it seems they may continue because of our attempts to control them. We think of something again and again because it is distressing, because it disturbs our plans, because we don't tell others about it, and perhaps ultimately, because we try not to. There are many ways in which something can become a *Zahir*.

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