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Stress and Mental Control

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INTRODUCTION

Normally, we seem to have a measure of control over our thinking. We often attend to things just by wanting to do so, and attend away as well when it suits us. The luxury of mental control is frequently lost, however, when we encounter everyday stresses. Small stresses occupy our minds with worry and distract us from the things we would like to think about; large stresses wrest our attention away repeatedly, sometimes chronically, and leave us wondering if we can control our minds at all. This chapter is concerned with the nature of mental control, the effect of stress upon it, and the tactics that may be useful in regaining mental control in the face of stress.

FORMS OF MENTAL CONTROL

If we have any mental control, it seems to start with our ability to influence our focus of attention. William James held that 'effort of attention' is the 'essential phenomenon of will' (1890, p. 562), meaning by this that one can willfully perform an action by means of directing one's attention toward the idea of the action. Mental control in this kind of analysis is viewed as the first step toward 'will power', and so stands as a key to any other kind of control we might claim to have. To control our movements, our emotions, our addictions, our desires, our diets, or anything else, we must first control our attention.

Attention Control

James' analysis of the 'effort of attention' was limited to one aspect of attention control, *concentration*. He noted only that we had the occasional capacity to attend toward things at will. A more complete analysis would also include the complementary attentional enterprise often emphasized by Freud (e.g. 1915/1957)—*suppression*, or the capacity to attend away from things at will.

These two processes are interdependent. An act of concentration seems to entail a simultaneous suppression, in that concentrating on item A depends on suppressed attention to items that are not A. This is the classic problem addressed by filter theories of attention (e.g. Broadbent, 1958). As a rule, theorists have claimed that we must somehow process, at least minimally, the information that we do not consciously heed, if only to filter that information out of awareness. By the same token, suppressing typically entails concentration as well. The suppression of an item usually will require concentrating on some other items—unless we manage somehow to become completely unconscious.

Despite these links of concentration and suppression, when we exert mental control we normally seem to energize only one of the processes. We can explicitly attempt to concentrate (and implicitly suppress), or explicitly try to suppress (and implicitly concentrate). In either case, we appear then to overcome willfully the background processes that usually guide our attention when we are not exerting control. These processes, like the ones that control breathing when we are not taking a breath 'on purpose', seem to work quite automatically. There are automated processes that parallel concentration, drawing our attention toward items that have salient stimulus properties and away from items that are non-salient (Kahneman, 1973). There are automated processes that parallel suppression, drawing our attention away from items that have extreme stimulus properties and toward items that are less extreme (Berlyne, 1960).

The basic processes of concentration and suppression could be responsible for starting and stopping a wide array of mental processes. This activity makes mental control a major aspect of metacognition. In the case of metamemory (Flavell and Wellman, 1977), for example, it appears that people who concentrate on certain features of the task of remembering may gain in mental control, in that they increase their ability to use their memory systems more effectively. Judgment processes might also be brought under control by attention deployment or withdrawal (Wegner and Vallacher, 1981). Any mental processes or contents that are open to awareness are the potential target of control attempts, each a possible target of the will.

Control Failure

Our capacities for concentration and suppression seem only partially effective. For example, on three different occasions I asked a group of 33 undergraduate subjects to spend 30 seconds thinking of a coffee cup. They were also asked to make a mark on a piece of paper each time their attention drifted off the topic in the time period, if it did so. The mean number of marks was 3.3 in a 30-second period, indicating that attention drifts away frequently even when people are willing it to stay on a certain item. At the same three points, I also asked this group to spend a 30-second period *not* thinking of a coffee cup. They were asked to make a mark each time they thought about the item, if they did. The mean number of marks was 3.7, showing that suppression is an imperfect mental control process as well. People do not seem able to control their attention for longer than about 10 seconds under these conditions.

It is difficult to discern just what one should have expected from a study of this

kind. Given that the subjects were constrained to perform a behavior upon each control failure (making the mark), one might argue that the response contingency itself could remind subjects of the potential of failure and lead them to fail. Nonetheless, similar processes might normally accompany natural mental control, in that *internal* responses to concentration or suppression failure would usually occur to serve the same function as the external marks. The failure to concentrate should prompt an internal response to return to the focus, whereas a failure to suppress should prompt an internal response to begin suppression anew. In other words, because any control failure would tend to elicit subsequent reactions, the failure rate observed in this, admittedly contrived, demonstration might not be very far removed from that people could experience in daily life.

It does seem, however, that failures associated with concentration are less conspicuous than those associated with suppression. A failure to concentrate, because it leaves the person attending to *anything* other than the initial focus, is likely to be difficult to notice. It is not heralded by the arrival of any particular item in consciousness (rather by a disappearance), and unless one is specifically anticipating a disappearance, the new entry to awareness will signal little at all. A failure to suppress a thought, in turn, is signalled clearly by the presence of the unwanted thought. The thought once driven away is easy to recognize on its return, and the failure is duly noted.

This analysis suggests that, by and large, cognitive failures that come from concentration lapses will be non-salient whereas those that arise from suppression lapses will be noticed by the person. In essence, one only notices concentration failures some time later, whereas suppression failures are immediately evident. Perhaps this is why there is no unitary label for concentration lapses in diagnostic categories for psychopathology. We could speak of attention deficits, perhaps, or dementias of some kind. Suppression lapses, however, are well known in terms of a familiar category: obsessional thinking. Indeed, a wide array of psychopathologies involve failures in suppression, the occurrence of unwanted thoughts, or unusual preoccupations. Janet (1925) even held that all mental disorder could be traced to the occurrence of 'fixed ideas'. It is not too surprising that normal individuals experience profound lapses of this kind as well (Berry, 1916–1917; Rachman and de Silva, 1978).

Obsession recommends itself, then, as a prototypical failure of mental control. For this reason, it is worthwhile to examine in some detail the relationship between stress and obsession; we may learn from this analysis how stress impinges on mental control generally. So, although stress has been identified as a critical precursor of yet other lapses of mental control, especially those related to concentration (see, for example, Fisher, 1984; Reason, Chapter 22 in this volume), our concern here is an understanding of what stress may do to affect suppression and obsession.

ORIGINS OF OBSESSION

Obsession and suppression can be difficult concepts to separate at a simple definitional level. This is because they both pertain to unwanted thoughts. When a thought is 'unwanted', it often qualifies as a worry or obsession, and at the same

time appears to be a candidate for suppression. It is only when we consider the frequency, intrusiveness, or vividness of the thought that we can begin to see obsessive thoughts as more than merely 'unwanted' (see, for example, Rachman and Hodgson, 1980; Reed, 1985).

This ambiguity in the definition of obsession, however, suggests a useful way of distinguishing between two quite different sources of obsessional thinking. On the one hand, obsessions may originate because the thoughts themselves are truly abhorrent and become unwanted. Such obsessions stem from traumatic origins, and have been documented repeatedly in several literatures. On the other hand, though, it may be that certain obsessions originate from nearly arbitrary origins, becoming problematic only because of the development of excessive desires for suppression. The 'unwanting' itself promotes the problem. This second category of obsession development has not been fully documented in the empirical literature, and thus must be examined in detail. In this section, each source of obsessional thought is considered in turn.

Traumatic Obsession

People acquire obsessive thoughts as the direct result of exposure to traumatic, stressful events. This fact was recognized by Freud (e.g. 1959) in a theory of traumatic neuroses, and has been demonstrated in many studies. When one loses a spouse or child in a motor vehicle accident, for instance, it is likely that one will continue to ruminate about the loss for years (Lehman *et al.*, 1987). Being the victim of incest is likewise a trauma of major proportions, one that commonly engenders disturbing, obsessive thoughts that may in some cases last a lifetime (Silver *et al.*, 1983). Witnessing a terrorist attack can produce distressing thoughts that reappear over a prolonged period, both in wakefulness and in dreams (Ayalon, 1983). Obsession in response to traumatic events like these is widely recognized as a natural occurrence.

Phenomena that echo this relationship have been found in circumstances that are much less extreme. Horowitz (1975) demonstrated in a series of experiments, for example, that exposure to filmed traumatic events leads people to report intrusive, repetitive thoughts afterwards. These thoughts typically center on the traumatic event. At a more global level, related results were obtained in a study I conducted with a group of subjects who were asked to rate their daily level of overall stress, and their daily level of unwanted thoughts, for a period of 42 consecutive days. The correlation between these daily ratings was reliably greater than zero for 21 of the 33 subjects, with a median value of 0.31. It may be that even some relatively minor daily stresses give rise to rumination, but because the causal direction of the correlation is not yet known, this conclusion is uncertain.

Although there is considerable unanimity in the literature regarding the existence of traumatic obsession, there is much less agreement on why it is so persistent. One argument is that affective processes are primary in the development of memory (cf. Zajonc, 1980), and that the obsessive retrieval of a memory is produced when the memory has strong affective content. Laboratory research has indicated that affective or evaluative judgments of neutral stimuli enhance

memory for those stimuli (Hyde and Jenkins, 1969); soliciting affective reactions to pictures of faces makes subjects more inclined to remember those faces as well (Patterson and Baddeley, 1977). Traumatic experience may induce obsession because sufficient affect is marshalled to create an extraordinarily strong memory trace, a cognitive representation that holds the trauma in a central position in the overall memory organization. One might not even be able to recall specifics of the incident, but still associate severe affective reactions with stimuli linked with the incident (Jacobs and Nadel, 1985). In this view, suppression might follow an obsessive thought—but it would remain an afterthought, a weak response to an otherwise overpowering mental event.

A second explanation of the persistence of ruminations following traumatic stress is that the ruminations are coping strategies. Epstein (1983) has argued that reliving a trauma can have palliative effects over time, producing an eventual habituation to the stressful stimulus. In this view, the normal response to any disturbing event is a brief obsession, a tendency to think about the event in an effort to understand it. This is effective in many cases, but becomes troublesome when the trauma is particularly severe. Habituation may be complicated in these instances because of the person's tendency to avoid thinking about the trauma whenever the rumination occurs. This line of theorizing implicates suppression in the continued momentum of obsession, in that pre-emptive suppression may prevent the person from achieving complete habituation.

A third interpretation of chronic rumination following trauma is the idea that the emotional reaction to the trauma must be expressed. Freud held that such expression, or *abreaction*, was necessary (e.g. Breuer and Freud, 1895), and his idea has been reiterated in many forms since. Lindemann (1944) believed that full expression of grief at the time of bereavement was necessary to avoid subsequent rumination, but that later grief expression could serve this purpose as well. Rachman (1980) developed the theory of emotional expression more fully to represent this process in other domains. And, most recently, Pennebaker (1985) has shown in a number of investigations that significant health problems occur in individuals who fail to confide their traumatic experiences to others. This perspective also might hold suppression responsible for continued rumination, in that the impulse to suppress could interfere with full expression of emotion.

A decision on the relative validity of these approaches to the longevity of traumatic obsessions will require extensive inquiry. We seem in this case to know quite clearly what can cause an obsession, and the major concern is with the efficacy of competing theories regarding its cure. All of these various formulations do hold in common, however, an underlying assumption. In each case, it is regarded as fairly obvious that a desire for mental peace makes suppression a standard reaction to obsessive, unwanted thoughts. This notion that suppression must only *follow* obsession can be challenged by a different view of obsessive thought origins.

Synthetic Obsession

It is conceivable that obsessions can arise from suppression, without stemming

from any particular traumatic experience. Such an origin might account for the variety of obsessions people develop that seem to center on relatively mundane matters, concerns that are not obviously linked with any specific stressor. The obsessions people develop about weight gain, cleanliness, lost loves, jealousies, health, orderliness, the safety of loved ones, sexual inadequacies, feared victimization, personal improprieties, and on and on, are often difficult to trace to traumas. Now, as Freud (1901/1953) suggested, potentially traumatic origins for many pedestrian obsessions might be masked by childhood amnesia (cf. Wetzler and Sweeney, 1986). Yet certain obsessions seem to be constructed right before our eyes in adulthood. It might be more straightforward to start fresh with these cases and to consider the possible beginnings of obsession in the process of thought suppression.

All it takes to start is a desire to suppress a thought. The desire is difficult to satisfy at first, because the task of thought suppression is not easy. We fret over the suppression for a bit, wondering why we have trouble getting rid of this particular thought. Eventually we seem to succeed, however, as we become drawn to the other thoughts of daily life. For one or another reason, though, we are then reminded somehow of the suppressed thought, and at this point it looms slightly larger in mind. Something has happened to make it more noticeable, and we attend to it, perhaps again with the hope of wishing it away. It is more difficult to dispel this time, and we wonder why almost everything seems to remind us of the unwanted idea. We suppress it again, and again it returns with even greater insistence, eventually to visit our minds emphatically and frequently, beyond our now feeble attempts at control. And, in the turmoil, we may become highly anxious about our mental state as the result of yet other stresses that are wholly unrelated. This is the typical course of development of a synthetic obsession.

How might this sequence of events occur? The initial wish to avoid a thought could arise from several sources, none particularly unusual or traumatic. The motivation to avoid thoughts of food and eating, for instance, could arise from the simple desire to lose weight. *Self-control* strategies usually depend on individuals exercising their wills to suppress certain thoughts related to the actions being controlled. So, we try to avoid thoughts of tobacco, alcohol, heroin, or the like, in a period of abstinence, and extend this rule to all addictive substances. Similarly, it could be important to suppress thoughts of socially or personally disapproved actions as well, especially if these are problems of self-control. People who are trying to stop gambling, committing crimes, or seeing a cruel partner may view their problems as addictions and engage thought suppression as an aid.

One might also pursue thought suppression in a variety of other social circumstances. A need for *secrecy*, or, more generally, for deception in the service of positive self-presentation, could incline individuals to suppress thoughts. It is dangerous to rehearse the revelation of a lie while in the presence of the person being deceived, for example. And it is particularly distressing that the presence of the person from whom we must keep the awful truth of some fact almost inevitably brings the fact to our minds. The need to keep a secret creates considerable mental turmoil when we face the people we deceive, for we have multiple incompatible actions in mind. To tell or not to tell? Mental disturbances related to this conflict

are likely to get us into trouble. This will prompt us either to avoid people who do not know our secrets, or to suppress the secret thoughts at least for the duration of the encounter.

And, finally, there may be some thoughts we suppress at first simply in the pursuit of *mental peace*. An idea may be replaying itself in our minds for no apparent reason, but we think it is happening too often. Although it does not interfere with particular behaviors (as in the case of ideas suppressed during self-control or secrecy), this idea may concern us merely in that it is a preoccupation. We note that we have a 'worry', and we wish it would go away. We have a little bump and we think of cancer, for instance, but we have not seen a physician. We sense it soon after we wake in the morning, and it intrudes occasionally all day. Rather than control the situation that the worry is about, though, we become concerned that we are worrying and treat it as a problem of mental control. We decide we are silly for worrying, so we try to set the thought of the bump aside.

None of these sources of suppression appears particularly strong or persistent. The pressures for self-control, secrecy, or mental peace may come and go, producing in their moments only the briefest interest in maintaining a suppression of thought. For this reason, we could easily question their efficacy in the production of an obsession. It is only because of additional processes that occur following initial suppressions that these first attempts to block a thought might serve as the seeds of obsessive rumination. The processes that energize the synthesis of an obsession can be categorized in terms of (1) rebound effects, (2) positive feedback processes, and (3) arousal-transfer processes.

Rebound effects occur when the person stops suppressing and gives license to the rumination. Unwanted thoughts can become more frequent and intrusive following an attempt at suppression than they were before it. After a diet, for example, a person might become quite preoccupied with the very thoughts of food that he or she was attempting to suppress. There is evidence that a history of dietary restraint can cause obesity (Polivy and Herman, 1985). It is also well established that the breakdown of abstinence from any addictive substance typically yields more than a 'sampling' of the substance, rather a complete relapse of addiction (Marlatt and Parks, 1982). The abstaining alcoholic falls 'off the wagon' not with one drink but with many.

Likewise, in other spheres, the person who has tried to suppress thoughts of, say, a child dying, a lover leaving, or an accident happening, may find many related thoughts crowding into consciousness when just a first image is allowed. The legacy of Freudian theory has tended to obscure this possibility because Freud (e.g. 1915/1957) popularized the idea that people are regularly capable of repression, the complete expulsion of unwanted thoughts from memory. Research has revealed this eventuality to be rare and perhaps non-existent in the form in which Freud envisioned (e.g. Erdelyi and Goldberg, 1979; Geiselman *et al.*, 1983; Holmes, 1974). Suppressed thoughts are not necessarily erased from memory—only from attention—and thus are always available for activation and even possible preoccupation. The developmental patterns of such rebound phenomena are not yet well established in the experimental literature, and this problem is the focus of much of the remainder of this chapter. If such rebound

effects reliably occur, they provide the substance for yet further amplification through positive feedback and arousal-transfer processes.

Positive feedback processes would be likely to occur as the immediate result of suppression-induced rebound. A positive feedback mechanism is one that produces adjustments in a behavior or thought process *away* from some set level each time it cycles (von Bertalanffy, 1968). When the individual suppresses a thought and experiences a subsequent rebound of preoccupation with that thought, renewed suppression attempts would often be produced. Failure to suppress a desire for food after a diet, for example, could lead to an eating binge; this, in turn, might motivate a return to the diet and its associated attempts to suppress thoughts of food. This second occurrence of suppression, however, might be somewhat more difficult than the first, if only because the intervening rebound has strengthened the obsession. Over time, repeated cycles of suppression and obsession would occur, perhaps escalating in intensity with repeated suppression failures. This positive feedback process could turn a mere whim to suppress into a disturbing synthetic obsession.

Ruminations established in this way could be susceptible to further amplification through arousal-transfer processes. These processes, of course, have been identified in many inquiries inspired by the Schachter and Singer (1962) model of emotion. This work indicates that people are often mistaken about their emotional states. Non-specific arousal that arises from various stressors can make the person seek out possible causes, misattribute the arousal to them, and thus experience an emotional state that was not truly the cause of the arousal. There is enough research in this area to indicate that the translation of one emotional state to another could be a fairly common occurrence (e.g. Zillman, 1983). Worry about a newly synthesized obsession, after all, would be a handy factor to blame in the arousal misattribution process. The minor stresses of everyday life at work and at home might be forgotten as sources of emotion, and the arousal coming from them could be transferred to a synthetic obsession (cf. Borkovec *et al.*, 1983). Worry about the development of the obsession, in turn, could fuel more suppression and perhaps further rebound effects.

Relations Between Obsession Processes

The distinction between traumatic and synthetic obsessions seems to be a natural one, as it can account for the very different topics that obsessions may embrace. The distinction also allows an understanding of the different roles that stress may play in the development of mental control difficulties. Major stresses may engender obsessions directly, leading to problems in mental control that are focused primarily on the themes of the original trauma. Minor stresses, in turn, or even the anxieties that come from unresolved responses to major stresses, can serve to fuel a sequence of events that produces odd, idiosyncratic, and sometimes arbitrary obsessions. These mental control problems are synthetic, in that they are built from a suppression process gone awry. In trying to avoid a thought, however briefly, we find the thought repeating itself, kindled by insidious processes that usually lie outside our scope of awareness. It is transformed, given promotive

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circumstances, into a synthetic obsession that seems every bit real.

It is through translations such as these, then, that obsessions can seem to generate one another, overtake one another, or spring into existence in groups. The person who is one day a hypochondriac may the next be ruminating about a household insect problem or entertaining obsessive jealous thoughts of a spouse. The trauma that causes one obsession can provide the arousal to inflame others that seem, on the surface, to be wholly unrelated to the first. These interrelations make individual case histories confusing and complex, full of ambiguities only to be resolved when we recognize that obsessions can be traumatic or synthetic.

THOUGHT SUPPRESSION AND OBSESSION

The evidence for the development of synthetic obsession is fairly recent and still largely suggestive. Although it is clear that obsessions with food and other addictive substances can arise from suppression in natural settings (cf. Polivy and Herman, 1985), the evidence linking suppression to obsession more generally comes principally from laboratory studies. These studies do provide, however, a set of findings that appear to correspond well with processes and outcomes observed in realistic cases of obsession and preoccupation.

The White Bear Study

Experimental participants were asked by Wegner *et al.* (1987, Experiment 1) to spend a period of 5 minutes verbalizing the stream of their consciousness for a tape recorder. They were asked merely to think aloud, verbalizing every thought, feeling, or image that came to mind, and were assured that the recordings would be completely confidential. This period served to accustom subjects to the reporting technique to be used for the experiment.

Some research participants were then asked to continue their reporting, but now to follow an additional instruction: 'In the next 5 minutes, please verbalize your thoughts as you did before, with one exception. This time, try not to think of a white bear. Every time you say white bear or have white bear come to mind, though, please ring the bell on the table before you.' This suppression instruction typically led participants to ring the bell repeatedly (a mean of 6.07 times in 5 minutes) and mention 'white bear' from time to time as well (1.59 mentions). This level of thought is interesting in light of the instruction, but it is far lower than the level observed when a separate group of participants was asked to follow expression instructions—attempting to think of a white bear. Their bell rings averaged 11.82 and mentions occurred a mean of 11.52 times in 5 minutes. Nonetheless, it is noteworthy that complete suppression was initially difficult to manage.

These suppression and expression subjects were then asked to perform the complementary tasks. Those who had suppressed were now asked to think about white bear, whereas those who had expressed were now asked to stop thinking about white bear. This manipulation produced an increased level of expression in the group that had initially suppressed the thought. These subjects rang the bell an

average of 15.71 times and mentioned white bear an average of 14.35 times, a level significantly greater than that shown by the subjects in the expression period in the group that performed no initial suppression. The mere act of avoiding a thought for 5 minutes, it seems, made subjects oddly inclined to signal a relative outpouring of thought occurrences when they were subsequently allowed to express the thought.

The observed pattern resembles quite strikingly the hypothesized rebound effect, an incipient obsession produced by suppression. A number of other features of the data in the study lend further credence to such an interpretation. For instance, it was found that responding in the 'rebound' period (expression following suppression) increased reliably over the time interval—whereas it decreased reliably over the same interval in each of the other experimental periods. Moreover, those subjects who were the better suppressors at first were found to be more expressive later on when given license in the expression period. This correlational relationship did not hold among subjects who expressed first; here, the more expressive subjects also showed more thought tokens in the suppression period. In short, the better a subject was at following an initial instruction to suppress, the more likely the subject was to show the rebound of thought expression.

Why does this rebound effect occur? A possible answer to this question is suggested by the think-aloud protocols we collected as people were trying to suppress the thought. Almost invariably, people would say 'Okay, if I can't think of white bear, I'll think of something else.' They then would turn their attention toward items in the room, toward plans for the day, or toward yet other things, in an attempt to distract themselves from the white bear. This process of self-distraction may be responsible for producing the rebound effect. To understand how, it is necessary to consider the nature of self-distraction in some detail.

Self-Distraction Processes

When psychologists study distraction, they usually provide subjects with distracting stimuli. So, for example, in learning that distraction may be an effective technique of pain control, researchers have standardly provided subjects with instructions to focus internally on a particular stimulus, or have provided subjects with an external stimulus to consider (McCaul and Malott, 1984). When people try to distract *themselves*, however, a quite different process seems to occur. The person rummages briefly through memory, or through what is presently in view, and selects a distracting stimulus. This could be a lightbulb, for instance, or the thought of a friend's wedding, but in any case it is selected arbitrarily by the person at the time. The person searches for anything that is 'not a white bear', using the unwanted thought as a *negative cue* for further thinking.

This feature of natural self-distraction usually accompanies the suppression process to produce the rebound effect. In essence, the person attempts to suppress the thought of white bear, say, by looking at a lightbulb and thinking about it instead of the white bear. This is not very intriguing, and attention eventually wanders back to white bear. Then, the person might think of something else, maybe the friend's wedding, to use it in the self-distraction attempt. This, too, is

not very interesting for long, and perhaps fails to lead the person's thoughts far enough away from the white bear task, so attention returns again to the to-be-suppressed stimulus. In these repeated attempts at self-distraction, all the person has succeeded in doing is creating associations in memory between white bear and the failed distracters—the lightbulb and the wedding.

Such associations would not normally arise if the person were merely trying to think about a white bear. An expression task of this kind would only lead the person to investigate ideas that are already associated with white bear—perhaps to include thoughts of the North Pole, eskimos, or the zoo. Therefore, thought suppression introduces a unique propensity to create new associations with the unwanted thought. As the result of a poorly focused, wide-ranging self-distraction procedure, the person comes to attach the unwanted thought to every distracter that has come to mind. The person's environment, in consequence, now contains a number of new reminders of white bear, and any other thoughts that were current on the person's mind may similarly now be attached to white bear as well. This seems to be the usual effect of unfocused self-distraction.

It is easy to see that unfocused self-distraction could supply the cognitive underpinnings for a well-developed preoccupation. Once the person had suppressed a thought with sufficient frequency in a particular setting, many of the features of that setting would be imbued with cues for the retrieval of the unwanted thought. The lightbulb, for example, is not a white bear, nor is the friend's wedding. As long as the individual remains in the setting that contains all these distracters from the unwanted thought, the thought itself should be especially available for retrieval.

This explanation was tested by Wegner *et al.* (1987, Experiment 2). In this study, some subjects replicated the conditions of the original white bear research, whereas others undertook to suppress the white bear thought with the aid of a *focused distraction* instruction. These subjects were encouraged not to think of white bear in a suppression period, and were instructed that whenever white bear came to mind, they were to think of a red Volkswagen instead. This single focus was planned to cut short the tendency to think of anything at all whenever white bear was to be avoided, and so to eliminate the associative linking of white bear to these various ongoing thoughts. The results revealed that the intervention was effective, in that the rebound effect was wholly undermined. (It should be noted, though, that the rebound effect remained alive and well in those subjects who participated in expression following suppression, but without the aid of the focused distraction instruction.)

In a related experiment conducted by Wegner *et al.* (1988), the unfocused self-distraction hypothesis was subjected to a different sort of test. Here, the participants were presented with specific contexts for thought in the first and second experimental periods. Some subjects were exposed to conditions designed to replicate the general arrangements of the original study. Because subjects in the original study spent both the suppression and expression periods in the same room with little change, subjects in this condition of the present experiment were shown a relatively unchanging context—a slide show featuring a sequence of photos of related items (either classroom scenes or household appliances).

Other subjects, in contrast, were presented with different contexts for their suppression and expression tasks. They were shown either the slides of classrooms in one period and the appliances in the other, or vice versa. This variation was designed to reduce the degree to which the attachment of the unwanted thought to thoughts of the present context during suppression could transfer to the (new) context in the subsequent expression period. Although subjects would still be in an experiment (with all its contextual trappings), at least one key feature of their environment would change between periods, perhaps enough to supply fewer cues for retrieval of white bear during expression.

The results supported this analysis. Subjects whose context was changed from suppression to expression showed little evidence of a rebound effect even though the effect was again observed among those whose context was left unchanged. A constant context appears necessary for the elevation of expression scores following suppression above those observed in subjects without such initial suppression. These findings substantiate the idea that a natural strategy of *unfocused self-distraction* underlies the development of preoccupations following suppression.

Alleviating Synthetic Obsession

People trying not to think of white bears in the laboratory can, apparently, get into the very trouble that seems to foster the development of synthetic obsessions in everyday life. They engage in a cognitive strategy that, at face value, appears to improve their condition. They think of anything other than their unwanted thought. This strategy brings only passing relief, though, because it infects their every distracting idea with the germ of the rumination they wish to dispel. These distracters, when again encountered, are reminders of the thought that has been suppressed.

One measure to be taken to weaken synthetic obsessions would be the adoption of a limited array of distracters. Like the red Volkswagen in the focused distraction study, this special set of distracting thoughts might not aid in suppression at once. But over time, they could keep the rebound from happening. The suppressed thought would only be cued by the limited set of ideas that had been used for self-distraction—certain items around the house, perhaps, or religious icons, or the people one looks to under stress. This limitation would keep the remaining universe of thoughts generally free of contamination with the unwanted thought.

Another strategy suggested by this research would be a change of context. Like subjects who have changed from watching slides of classrooms and are now watching those wonderful household appliances instead, people who change contexts leave unwanted thoughts behind. The old context contains all the things one turned to for solace or distraction in the throes of the unwanted thought, and these now have become tarnished themselves. The new context is free of reminders about what one did not want to think, and for this reason will serve to stimulate fewer memories of the unwanted thought. A vacation, a new home, a change of outfits or friends, might be particularly useful to promote a change of mind.

Beyond the recommendations that flow from these studies, there are some further possibilities suggested by the more general developmental conditions of synthetic obsession. Even though the rebound effect can be seen as an early contributor to synthetic obsession, it seems unlikely that a fully bothersome obsessional state would be achieved by this means alone. It may more often be the case that rebounding preoccupations are given impetus by repeated, escalating occurrence in the presence of physiologically arousing stimulation of some kind. Prolonged arousal, then, could have extreme effects on obsession development. This realization points toward relaxation as a general treatment for synthetic obsession as well. As this technique is already well established as a useful therapy (Rachman and Hodgson, 1980), the present analysis has only an additional vote to add.

Ultimately, the most general advice suggested by these findings is to stop stopping. Thought suppression is, after all, a form of mental control, and thus it should be to some extent voluntary. Therapies that depend on a paradoxical tactic of 'flooding' people with the unwanted thought appear to be much more effective than thought-stopping techniques or other suppression-promoting interventions (e.g. Reed, 1985). So, although not suppressing might sometimes be the very last thing a person would want to do, it could be the best. Telling a trusted friend, writing about the problem, or even making a public scene could be healthy steps (cf. Pennebaker, 1985), as these activities would be incompatible with suppression. Finding conditions under which the person could feel comfortable, or at least able, to stop suppressing for a time, could be the key to overcoming synthetic obsessions.

SUMMARY AND CONCLUSIONS

The inquiries examined in this chapter range over a variety of problems in the relationship between stress and mental control. The analysis has centered on the notion that the relationship between these factors may be reciprocal in an important sense. Stress may induce lapses in mental control. In particular, traumatic stress can often cause obsessional thinking. But it appears that mental control may also be a precursor of self-induced stress. There is evidence that certain attempts to suppress thoughts may have the unfortunate effect of stimulating preoccupation with those very thoughts, sometimes to the point of a synthetic obsession. And, because people often can be alarmed by their own cognitive processes (Mandler, 1979), they enter into periods of stress that are largely traceable to mental control.

There is a broad program of research required on the problem of synthetic obsession, as it is only vaguely understood at this point. We know that certain phenomena in laboratory studies of thought suppression and field studies of self-control point to such an effect, but few investigators to date have seriously entertained the possibility that *many* obsessions, addictions, preoccupations, or sharply focused mental states might be manufactured by this process. Synthetic obsessions are certainly more than laboratory curiosities, but their role in the general scheme of cognitive failures is only now becoming evident. At the

minimum, synthetic obsessions might be little more than the worries we have when we are failing at thought suppression. At the extreme, however, synthetic obsessions could be major flaws in the fabric of mental peace, frailties that endanger us to the stresses of everyday life.

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KEY WORDS

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