Chronic Thought Suppression

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ABSTRACT We conducted several tests of the idea that an inclination toward thought suppression is associated with obsessive thinking and emotional reactivity. Initially, we developed a self-report measure of thought suppression through successive factor-analytic procedures and found that it exhibited acceptable internal consistency and temporal stability. This measure, the White Bear Suppression Inventory (WBSI), was found to correlate with measures of obsessional thinking and depressive and anxious affect, to predict signs of clinical obsession among individuals prone toward obsessional thinking, to predict depression among individuals motivated to dislike negative thoughts, and to predict failure of electrodermal responses to habituate among people having emotional thoughts. The WBSI was inversely correlated with repression as assessed by the Repression-Sensitization Scale, and so taps a trait that is quite unlike repression as traditionally conceived.

People sometimes try not to think about things, and some people do this more than others. This proposition has been articulated by psychoanalytic theorists from Freud to the present, and has, for good reasons, been held at one time or another to illuminate almost every psychological problem we know. People who try not to think about things, after all, attempt to limit their own experience of themselves, perhaps with serious consequences—and at the same time exhibit a peculiar and potentially ungovernable sensitivity to the very things they wish to put out of mind. The goal of our research was to initiate a new

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step toward understanding the psychology of people who chronically suppress thoughts.

Instructed Thought Suppression

The plan for these studies grew out of a series of investigations of instructed thought suppression (Wegner, 1989, 1992). Beginning with research by Wegner, Schneider, Carter, and White (1987), subjects were asked in laboratory experiments to try not to think about some item—in this case, a white bear—and their continuous stream-of-consciousness reports were collected following this instruction. As it happened, the instruction to suppress a thought typically induced a remarkable preoccupation with that thought. Subjects were generally unable to suppress the thought completely and mentioned it multiple times even though under ordinary conditions they would have been highly unlikely to have entertained it in the first place. Such suppression-induced obsession has since been observed for a wide range of thoughts varying in their emotionality, self-relevance, and abstraction (see Wegner, 1992).

One way to understand this effect is to suggest that the intention to suppress a thought introduces two mental processes—a conscious, effortful operating process that searches for distracters, and an unconscious, relatively effortless monitoring process that searches for the unwanted thought (Wegner, 1992). People who think aloud during suppression do report a conscious, effortful search for "anything but" the to-be-suppressed thought. At the same time, they report intrusions of the unwanted thought that seem to indicate that some part of the mind is highly sensitive to this one topic. This sensitivity suggests that an unconscious and relatively effortless monitoring process runs in parallel to the operating process, seeking out occurrences of the very thought that is unwanted. Such a monitoring process makes sense as a psychological mechanism that allows the person to recognize the recurrence of the unwanted thought, so as to prompt the reinitiation of the operating process and thus to renew the task of suppression.

By this account, the difficulty of thought suppression occurs because the intention to suppress a thought instigates a monitoring process that ironically increases the cognitive accessibility of the unwanted thought. Such accessibility should be at a maximum when the conscious and effortful operating process is disturbed by the imposition of other tasks or stresses that also consume cognitive resources. Because the monitoring process is relatively unimpeded by such cognitive loads, it should be

released under these conditions to create extreme sensitivity to the unwanted thought. Just such effects have been observed in several experiments. Subjects trying not to think of a word under cognitive load become particularly prone to respond with that word in word-association tasks (Wegner & Erber, 1992, Experiment 1) and reveal their ready access to the word by displaying slow reaction times for naming the color in which the word is printed (Wegner & Erber, 1992, Experiment 2; Wegner, Erber, & Zanakos, 1993, Experiment 2).

When people are instructed to suppress emotional thoughts, the resultant sensitivity to these thoughts appears to heighten emotionality. Subjects asked to suppress thoughts that are exciting (say, of sex) show electrodermal reactivity at this time that is just as strong as reactions that occur when they are asked explicitly to entertain those thoughts (Wegner, Shortt, Blake, & Page, 1990). Moreover, during suppression of emotional thoughts, intrusive recurrences are associated over time with electrodermal responses—whereas such an association is not found during intentional concentration on these thoughts (Wegner et al., 1990). This research suggests, then, that the extreme accessibility of the suppressed thought that is introduced by the suppression monitoring process heightens the degree to which any emotion attached to the thought will be expressed.

The magnification of emotional response to suppressed thoughts seems to continue, then, even when suppression is discontinued and subjects are asked to return to the suppressed exciting thoughts and think about them. Emotional thoughts that were once suppressed yield stronger psychophysiological responses than those that were not suppressed (Wegner & Gold, 1992; see also Cioffi & Holloway, 1993; Pennebaker & Chew, 1985). Apparently, the suppression of emotional thoughts prevents the person from habituating to the thoughts and thus lessening their emotional impact. It may even be that suppression promotes a dishabituation or relative elevation of emotional response to that thought.

Even unemotional thoughts that are suppressed later tend to reappear frequently in stream-of-consciousness reports when their expression is allowed. Indeed, compared to the frequency of thought about a white bear that follows an instruction to think about it, the frequency during such instructed thinking after a period of suppression is often reliably higher (Clark, Ball, & Pape, 1991; Wegner et al., 1987; Wegner, Schneider, Knutson, & McMahon, 1991; Wenzlaff, Wegner, & Klein, 1991). It may be that in using many different items in the service of

self-distraction from the unwanted thought, the person unwittingly creates implicit associations between the distracters and the thought. These links later allow the distracters to serve as cues or reminders of the thought, promoting subsequent concentration on it. In any event, the rebound of thought about even a white bear following suppression of that thought can become sufficiently intense that it creates the appearance of obsession.

Chronic Thought Suppression

These studies of instructed suppression suggest that people who suppress may unwittingly generate an array of unappealing consequences. To avoid these pitfalls, it would be useful to know which people elect to suppress thoughts in everyday circumstances. There may be particular experiences, of course, that compel anyone to use suppression as a mental control strategy. Wishing to avoid thoughts that are depressive, traumatic, socially inappropriate, or anxiety-producing, for instance, might well be common for anyone in the face of life events that bring these thoughts to the fore, and the desire to inhibit thoughts of food or addictive substances during self-control attempts might also be widespread. Beyond such situational goads toward suppression, however, there may be a generalized tendency to use thought suppression as a mental control strategy across situations and thought topics.

If we could isolate individuals who regularly suppress thoughts, we might find that they show psychological tendencies that parallel the ones observed in the research on instructed suppression. A general inclination to suppress thoughts should spur the chronic unconscious monitoring of the thoughts that are suppressed. This could predispose an individual to experience unwanted and intrusive recurrence of exactly the suppressed thoughts. After each exercise of suppression, the thought suppressor should be vigilant for those thoughts, and so should report conscious preoccupation with items that have been suppressed. Although the particular target thoughts could vary from one person to the next, the experience of obsession among suppressors should be pervasive. Our first general hypothesis, then, is that chronic thought suppression should be associated with the occurrence of obsessional thinking.

Two further hypotheses can be derived from a consideration of the kinds of thoughts that are likely to be suppressed. Although there are many reasons to suppress a thought, one general idea is that thought

suppression is suggested as a strategy when thoughts create unpleasant emotions (Wegner, 1992). Anxiety-producing thoughts and depressing thoughts, for instance, represent two broad classes of thinking that could often prompt suppression in a person so inclined. These thoughts themselves do not compel suppression, of course, as there are many other strategies that can be attempted in the pursuit of relief from the states that accompany such thinking (Nolen-Hoeksema, 1993; Rachman, 1990; Roemer & Borkovec, 1993; Wenzlaff, 1993). But if suppression is the strategy of choice, then emotional consequences suggested by the experiments on instructed suppression should surface.

The most general statement of the results of these experiments is that suppressing emotional thoughts increases the likelihood that the individual will fail to habituate to emotional stimuli relevant to those thoughts. This means that chronic thought suppression should be related to hypersensitivity to depressing and anxiety-producing thoughts, a readiness, as it were, to perceive sad and frightening thoughts. Such readiness should translate into the production of the mood states associated with these thoughts. The occurrence of chronic suppression, in other words, should yield the magnification of both depression and anxiousness, and so should be associated with measures of depressed and anxious affect.

The summary implication of the research on instructed suppression, then, is that chronic thought suppression should cause symptoms of obsession, depression, and anxiety. It is also quite possible to predict an association between thought suppression and these symptoms, however, without reference to the instructed suppression findings at all. It might well be that thought suppression does not cause these problems but rather *follows* from them. It is probably the more standard view of suppression (cf. Wegner & Pennebaker, 1993) that a proclivity to suppress thoughts is a response to a life of unwanted experiences rather than the cause of sensitivity to such experiences, and for this reason it seems reasonable to expect associations between thought suppression and a variety of concerns and complaints. In particular, thought suppressors could exhibit symptoms of obsession, anxiety, depression, and other expressions of negative affect not because suppression creates these indications but because it follows them as a reaction to unwanted thoughts. Ultimately, of course, it may be that thought suppression plays both roles—as a cause of distress and as an effect—and that it is therefore implicated in a cyclic relationship that promotes the continuation of distress.

Like most correlational studies, the present investigations were blind to the causal relationship underlying any association between suppression and other psychological symptoms. They could neither establish the causal priority of suppression and symptoms nor determine whether both stemmed from some unknown third variable. So, although our hypotheses were drawn from the experimental literature on suppression, they were not subject to unambiguous test in the individual difference paradigm. With this in mind, we designed the present studies not only to examine associations between suppression and various measures, but also to determine whether thought suppression can be understood as a broad risk factor for psychological distress—one that may be more telling than other, related measures. If chronic thought suppression is the villain that the experimental studies would have us believe, it should be associated with an array of mental control problems.

Overview of Studies

The question of interest for this research was whether there are reliable individual differences in the reported tendency to suppress thoughts, and if so, whether these differences have implications for the individual's psychological well-being. We set out to construct a measure of thought suppression through successive factor-analytic procedures and to examine its convergent and predictive validity. Our initial aim was to determine what combination of self-report items best indicates subjects' conscious attempts to remove thoughts from mind. The measure, once constructed, was then tested for its temporal stability and examined for its relationships with measures of obsession, depression, and anxiety.

Three studies of the predictive validity of the measure were then conducted. In one, we examined the possibility that individuals who had been selected as prone to obsessions by means of their high scores on the Maudsley Obsessive-Compulsive Inventory (MOCI; Rachman & Hodgson, 1980) might be differentiated further through analysis of their thought suppression reports. We expected that thought suppression might be a risk factor for diagnosis of obsessive-compulsive disorder (OCD) and so investigated its relationship to clinical indicators of this diagnosis. For a second study of predicative validity, we tested the hypothesis that thought suppression, combined with depression sensitivity—a desire not to experience negative thoughts—would predict depression as measured by the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979). The third predictive validity study was

designed to assess the possibility that individuals reporting high levels of thought suppression might show psychophysiological indications of the dishabituation of an emotional thought. We explored the skin conductance levels (SCLs) of subjects high in thought suppression as they were asked to reminisce repeatedly about emotional thoughts—their relationships with old flames. We expected that whereas nonsuppressors would show reductions in SCLs over time, thought suppressors would fail to habituate to these emotional thoughts and so show continued SCL reactivity over repeated experiences of thinking about their old flames.

Study 1: Factor-Analytic Selection of Items

Undergraduate students ($N = 735$) from Florida Atlantic University, George Mason University, Southern Methodist University, Trinity University, and the University of Texas, San Antonio, completed a 72-item survey. The 5-point Likert-type items included a range of questions we generated to tap the suppression and control of thoughts and emotions. A principal axis factor analysis of this inventory was performed followed by a varimax rotation, and this yielded a seven-factor solution (with all factors having eigenvalues > 1) accounting for 41% of the rating variance. A total of 68 items had loadings over .30 on at least one factor. We identified the factors as thought suppression (e.g., "I wish I could stop thinking of certain things"), negative affectivity (e.g., "I worry too much"), concentration (e.g., "I usually find it easy to concentrate"), mood control (e.g., "I like to think about the things that bother me"), easy control (e.g., "When I have troubling thoughts I just turn them off"), emotion inhibition (e.g., "I don't like to let myself cry"), and behavioral willpower (e.g., "I control my eating and drinking carefully").

Items loading above .30 on the first three factors were then considered for inclusion in a second item bank. These included items measuring thought suppression (17 items), negative affectivity (20 items), and concentration (4 items). Eight of these 41 items were not retained for further study because they loaded highly on the thought suppression and negative affectivity factors at the same time and we wished to isolate thought suppression items that were relatively independent of negative affect.

The resulting set of 33 items was administered to University of Virginia introductory psychology students in Spring 1991 ($N = 405$) and Fall 1991 ($N = 490$). A principal axis factor analysis with varimax

Table 1
White Bear Suppression Inventory

Item	Correlation with scale total
1. There are things I prefer not to think about.	.46
2. Sometimes I wonder why I have the thoughts I do.	.62
3. I have thoughts that I cannot stop.	.68
4. There are images that come to mind that I cannot erase.	.70
5. My thoughts frequently return to one idea.	.61
6. I wish I could stop thinking of certain things.	.77
7. Sometimes my mind races so fast I wish I could stop it.	.59
8. I always try to put problems out of mind.	.42
9. There are thoughts that keep jumping into my head.	.69
10. Sometimes I stay busy just to keep thoughts from intruding on my mind.	.63
11. There are things that I try not to think about.	.65
12. Sometimes I really wish I could stop thinking.	.62
13. I often do things to distract myself from my thoughts.	.62
14. I have thoughts that I try to avoid.	.71
15. There are many thoughts that I have that I don't tell anyone.	.47

Note. Item responses are on a 5-point scale from strongly disagree (1) to strongly agree (5). Correlations are with scale total less the relevant item. Correlation $N = 895$.

rotation was performed for this combined sample in an effort to again isolate those items that loaded highly on only the thought suppression factor. This analysis had a three-factor solution that accounted for 44% of the item variance. Eigenvalues for the factors were 9.2 (thought suppression), 3.1 (negative affectivity), and 2.3 (concentration). Using a loading criterion of .41, the thought suppression factor in this analysis contained 15 items.

One final factor analysis was conducted with this sample. The 15 items tapping thought suppression were factor-analyzed as a set, using a principal axis extraction with varimax rotation, and this analysis revealed that a one-factor solution accounted for 55% of the rating variance. The items in this set were selected to comprise the White Bear Suppression Inventory (WBSI), shown in Table 1. Corrected item–total correlations are also shown in this table. Table 2 indicates the means and reliabilities (Cronbach's alpha) calculated for the WBSI for several subject samples. Females typically show slightly but significantly

Table 2
Means, Standard Deviations, and Reliabilities for Administrations of the White Bear Suppression Inventory

Sample	*N*	Mean		Reliability	Standard deviation
		Men	Women		
Initial multi-university sample	735	50.9	51.7	.89	8.53
Fall 1990, UVA	609	46.4	47.8	.87	9.44
Spring 1991, UVA	405	43.9	46.4	.89	10.25
Fall 1991, UVA	490	44.2	44.8	.88	9.98
Spring 1992, UVA	507	43.4	47.6	.87	10.18

Note. Standard deviations are calculated for the sample of both sexes. UVA = University of Virginia.

higher thought suppression scores than males in most of these samples; *t* tests indicate that the difference was significant in every sample but the Fall 1991 sample.

The preliminary conclusion of these item-selection procedures is that it is possible to assemble a reliable measure of self-reported thought suppression. The WBSI appears to meet the criteria that are desirable for such a measure, in that its items form a coherent group that can be distinguished repeatedly from other items tapping similar constructs. In this sense, the factor-analytic work establishes that thought suppression is separable from negative affectivity, as the two were separated in both of our initial factor analyses. Thought suppression is also separable from several other similar constructs, such as emotion inhibition, mood control, and behavioral willpower, since these also loaded on factors other than thought suppression in the initial factor analysis sample.

Study 2: Temporal Stability of the WBSI

We hoped to learn whether people who report suppressing thoughts do so reliably over time, so we administered the WBSI to a sample of 162 undergraduates at the University of Virginia on three separate occasions. The first and second occasions were separated by times varying between 3 weeks and 3 months, and the second and third occasions were separated by 1 week. Correlations calculated between scores at these administrations indicated acceptable levels of temporal stability. The correlation from Time 1 to Time 2 was .69; the correlation from

Time 2 to Time 3 was .92; and the correlation from Time 1 to Time 3 was .69. These data indicate that self-reports of thought suppression are reliable over time and thus fulfill an important criterion for recognition as a trait.

Study 3: Convergent Validity of the WBSI

To examine the validity of the WBSI, we studied its correlations with several measures with which we anticipated it would converge. In particular, we expected that thought suppression would be associated with self-reports of obsessive thinking, depression, and anxiety.

Obsession

To examine obsessive thinking, a key measure we wished to explore was the MOCI, as this is a widely used indicator of clinically relevant obsessions and compulsions with demonstrated validity in a nonclinical sample (Sternberger & Burns, 1990). The MOCI allows the assessment not only of an overall obsessive thinking score, but also provides subscores for manifestations of OCD including checking, washing, doubt, and obsessive slowness. Although we anticipated an overall relationship between thought suppression and obsession, we were not as confident in extending this prediction to measures of compulsion (such as washing). Suppression may be a precursor to compulsive rituals, but we suspect that if this is the case, the relationship is moderated by obsessive thinking.

Across a variety of samples, thought suppression as indexed by the WBSI was consistently and significantly related to the overall obsession score on the MOCI (see Table 3). The MOCI obsession scale average correlation with the WBSI was .39 across all samples. This result substantiates our belief that suppression is associated with obsession. This should not be too surprising, however, in view of the importance assigned to "resistance" to obsession in the definition of OCD (American Psychiatric Association, 1987). It makes sense, after all, that people who are experiencing unwanted obsessive thoughts might resist them, and suppression is one option as a resistance strategy.

Average correlations of the WBSI with subscales of the MOCI across the samples showed significant relationships ($p < .01$) with compulsive washing ($r = .23$), checking ($r = .40$), and doubt ($r = .29$), but not with obsessive slowness ($r = -.02$). Although these subscales are less reliable than the overall obsession scale (Rachman & Hodgson, 1980), these relationships indicate that thought suppression is broadly connected to several manifestations of obsession and compulsion.

Table 3
Correlations between the White Bear Suppression Inventory and Other Measures

Measure	Sample	*N*	*r* with measure
Beck Depression Inventory	Fall 1990	609	.45*
	Spring 1991	405	.52*
	Fall 1991	490	.44*
Maudsley Obsessive-Compulsive Inventory	Fall 1990	609	.40*
	Spring 1991	405	.39*
	Fall 1991	490	.38*
Repression-Sensitization Scale (scored for sensitization)	Spring 1992	175	.58*
State-Trait Anxiety Inventory	Spring 1992	199	.53*
Anxiety Sensitivity Inventory	Spring 1992	133	.49*

*$p < .01$.

Depression

We tested the association between thought suppression and depression using the BDI. We expected that even though the WBSI had been constructed to minimize its overlap with measures of negative affectivity, at least partial overlap was inevitable. Watson and Clark (1984) have shown a substantial commonality among a wide array of measures of psychological distress, and we thought that thought suppression would be part of this body of measures. If, as we expect, thought suppression is linked with obsession, for instance, the observation that OCD diagnoses overlap substantially with diagnoses of depression (Gittleson, 1966; Rachman & Hodgson, 1980; Turner, Beidel, & Nathan, 1985) suggests that thought suppression might also exacerbate depression. Consistent with this possibility, Wenzlaff and Wegner (cited in Wenzlaff, 1993) found that depressed individuals reported frequent attempts to suppress negative thoughts. Thus, we were interested to learn that thought suppression in all of our samples was significantly related to depressive responding on the BDI (see Table 3), often with substantial correlations (mean $r = .47$).

Anxiety

Correlational investigations have also been conducted to examine the relationship of the WBSI with anxiety measures (see Table 3). One study investigated the relationship between WBSI thought suppression scores and repression as measured by the Repression-Sensitization Scale (Byrne, 1964) and revealed a strong correlation between suppression and sensitization, $r(175) = .58, p < .01$. This observation is consistent with the idea that thought suppression is linked to negative affectivity, since sensitization has been found to correlate almost perfectly with measures of negative affect such as the Taylor (1953) Manifest Anxiety Scale (Weinberger, 1990). This correlation indicates, however, that the WBSI measure of thought suppression is tapping something quite unlike repression as traditionally defined and measured. Thought suppression is associated with indications of greater negative affect, whereas repression has been defined in terms of the denial of negative affect.

This interpretation of the WBSI is consistent with our additional findings regarding its association with measures of anxiety (see Table 3). WBSI thought suppression was significantly correlated with trait anxiety as measured by the State-Trait Anxiety Inventory (STAI; Spielberger, Goresuch, & Lushene, 1970). WBSI thought suppression was also reliably related to anxiety sensitivity—the tendency to be alarmed by anxious symptoms—as tapped by the Anxiety Sensitivity Inventory (ASI; Reiss, Peterson, Gursky, & McNally, 1986). Apparently, the general sensitivity to anxious symptoms assessed by this measure is accompanied by a tendency to suppress thoughts.

We should caution that these correlational data are consistent with several possible interpretations of the relationship between thought suppression and the occurrence of obsession, depression, or anxiety. Although the experimental findings adduced earlier lead us to suspect that thought suppression is a causal factor in these disorders, the present findings are also consistent with the possibility that thought suppression is caused by these disorders, and with the yet less informative possibility that the covariation in thought suppression and any of the disorders is caused by unidentified third variables that cause both.

Study 4: Thought Suppression as a Risk Factor in Obsessive-Compulsive Disorder

If thought suppression is indeed a cause of obsession, we would expect that a tendency to suppress would incline obsession-prone people to exhibit more serious obsessive symptoms. This reasoning prompted us to study whether individuals who had been selected as obsession-prone by the MOCI would be at risk for clinically relevant obsessions primarily if they also show high levels of thought suppression.

For this study, 1,504 University of Virginia students were administered the MOCI, and the 5% scoring above 16 on the obsession scale ($N = 76$) were invited to participate individually in videotaped interviews. The Anxiety Disorder Interview Schedule (ADIS-R; Di Nardo et al., 1985) was conducted with each subject, emphasizing the sections of the schedule assessing obsessions and compulsions. Three raters observed each of the taped interviews and scored answers to the ADIS-R questions regarding 10 key variables regarding obsession, and again regarding compulsion. These variables were chosen for their relevance to the criteria for diagnosis of obsessive-compulsive disorder as specified by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R; American Psychiatric Association, 1987).

For obsession, ratings included overall presence of obsession (Is the person bothered by thoughts or images that keep recurring, that are unreasonable or nonsensical, and that he or she can't stop from coming to mind?), interference with daily life (Do these thoughts act as obstacles to the completion of usual, daily tasks?), constancy of obsession (Do these thoughts/images recur or have they just happened once or a few times?), severity of obsession (How incapacitating are the recurrences?), recognition of obsession (Does the person recognize that this is an obsession—as opposed to an ordinary thought?), resistance to obsession (Does the person try to get rid of the thought/image, or try to neutralize it with other thoughts/images?), avoidance of cues (Does the person avoid certain situations or objects because they might trigger the thought/image?), involvement of others (Does the person have other people do things for him or her in order to avoid contact with certain situations or objects?), frequency per day (How frequently per day does the thought/image occur?), and length of episodes (How many minutes per day does the person spend thinking about the thought/image?).

A parallel set of such ratings was made based on the ADIS-R protocols for each subject's experience of compulsive behavior. So, for example, overall presence of compulsion was assessed by judging whether the person reported having to repeat some act over and over again that doesn't seem to make sense and that he or she doesn't want to do. Across all these rated variables, the mean effective reliability of raters was .93.

Correlations were obtained between the subjects' scores on the WBSI

Table 4
Correlations between the White Bear Suppression Inventory and Features of Obsession and Compulsion

Features	Obsession	Compulsion
Overall presence	.43**	.19
Interference with daily living	.36**	.21
Constancy of disorder	.37**	.29*
Severity of disorder	.38**	.22
Recognition of disorder	.43**	.26*
Resistance to disorder	.32**	.02
Avoidance of cues	.25*	.03
Involvement of others	.17	.01
Frequency per day	.34**	.17
Length of episode	.29*	.01

Note. $N = 76$.
*$p < .05$
**$p < .01$.

(administered 1 to 3 months prior to the interview) and the raters' averaged scores on the obsession and compulsion variables. These correlations are displayed in Table 4. The correlations with ratings of overall presence of the disorder provide an apt summary of the general pattern of correlations. A significant correlation was found between thought suppression and the overall presence of obsession in the interview protocol ($r = .43$, $p < .01$), indicating that thought suppression scores predicted clinically relevant obsessional thinking even among people who had been selected specifically for their high self-reported obsessive and compulsive tendencies on the MOCI. The correlation of the WBSI with overall presence of compulsion, on the other hand, was not significant. (In this sample, 32 subjects showed overall presence of obsession and 50 showed overall presence of compulsion.)

The remaining correlations substantiate the association of suppression and obsession. Fully eight of nine possible correlations of suppression with specific obsession-relevant variables were significant, whereas only two of nine possible correlations of suppression with compulsion-relevant variables were significant. These findings suggest that among individuals scoring high on the MOCI for obsessions and compulsions, thought suppression is especially predictive of obsessive symptomatology and is not especially predictive of symptoms of compulsive

behavior. The MOCI is somewhat slanted toward the assessment of compulsion rather than obsession, and it is interesting that the tendency to suppress thoughts is an identifier of those individuals who are prone to obsess.

Because this study focused upon subjects selected for their self-report of obsessive and compulsive symptoms, it imposed a restriction of range on the occurrence of such symptoms in its target population. These results may therefore significantly underestimate the association of thought suppression and clinically relevant obsessional symptomatology in a general population. Although again it must be cautioned that these correlations do not establish causality, these results do indicate that thought suppression is a strong associate of obsessive thought, even in a group highly prone to such thought.

Study 5: Predicting Depression from Thought Suppression and Depression Sensitivity

The suppression of emotional thoughts, at least in laboratory experiments, appears to heighten emotional reactivity to those thoughts. If this tendency plays any part in the development or maintenance of chronic emotional states such as depression, it would seem to be particularly crucial among people who are highly motivated to avoid the depressive state (Wenzlaff, Wegner, & Roper, 1988). Not all depressed people would seem likely to engage in the suppression of negative thoughts, after all, because no matter how aversive those thoughts may be, one hallmark of depression is an inclination at times just to give up and "wallow" in the negative.

This reasoning suggests that the depressed person who (*a*) especially dislikes having negative thoughts, and (*b*) uses thought suppression as a strategy for dealing with those thoughts, should be particularly prone to depressed affect. To assess this possibility, we developed a brief measure of what we call *depression sensitivity*, the degree to which individuals find negative thoughts disturbing, scary, or socially unacceptable. In this study, we hypothesized that thought suppression and the presence of depression sensitivity would predict which individuals would be found battling mild depression.

To measure depression sensitivity, we constructed a 10-item questionnaire of 5-point Likert-type items. The items included: "It is important to me not to let my negative thoughts show," "When negative thoughts come into my mind I feel scared," "Other people notice when

I'm feeling badly about myself," "It is alarming to me when I become emotional," "It is important always to be happy," "It is important to control my negative thoughts," "My bad moods sometimes frighten me," "I am concerned when I feel sad," "I prefer for others not to know the bad things I feel," and (reverse-scored) "It doesn't disturb me to have sad thoughts sometimes." These items were administered to University of Virginia students ($N = 464$) and were found to form a scale of acceptable reliability for experimental purposes (Cronbach's alpha = .73). The mean summed score for this sample was 28.8.

To test the proposition that depression is predicted from the combination of thought suppression and depression sensitivity, we performed a hierarchical linear regression attempting to predict BDI depression scores from WBSI thought suppression, depression sensitivity scores, and their interaction. In this sample, the mean BDI score was 6.10 and the mean WBSI score was 46.20. To eliminate disparity between means as a source of interaction, WBSI scores and depression sensitivity scores were transformed into deviations from their means, and the interaction was computed as the product of these deviations.

Table 5 displays the correlations between the variables, the unstandardized regression coefficients (B), standardized regression coefficients (β), semipartial correlations (sr^2), and the R, R^2, and the adjusted R^2 after entry of all the IVs. Step 1 included WBSI thought suppression in a significant equation, $F(1, 459) = 146.38$, $p < .001$. With thought suppression as the only predictor, the equation explains 24% of the variance in the BDI score. In Step 2, with depression sensitivity added to the model, the equation remains significant, $F(2, 458) = 78.96$, $p < .001$, and adding depression sensitivity to the model significantly increased the amount of variance explained to 26%, $F(1, 458) = 8.99$, $p < .005$. Finally, the interaction of thought suppression and depression sensitivity was added, again yielding a significant overall equation, $F(3, 457) = 59.68$, $p < .001$, and a small but significant increase in R^2, $F(1, 457) = 15.97$, $p < .001$. These results indicate that the best fit to the data is that model which contains the main effects for thought suppression and depression sensitivity as well as their interaction to predict depression. The total variance explained by the complete model is 28%.

These findings support our hypothesis that subjects who report both using thought suppression as a mental control strategy and being sensitive to their depressing thoughts are prone to depressive affect. The interaction of these two variables assists in explaining more variance than considering only their combined main effects. Each main effect

Table 5
Hierarchical Regression of Thought Suppression, Depression Sensitivity, and Their Interaction on Beck Depression Inventory Scores

Variables	BDI	WBSI	Depression sensitivity	*B*	*beta*	sr^2 (incremental)
1. WBSI	.49			.26	.44	.24*
2. Depression sensitivity	.33	.44		.15	.13	.01*
3. Interaction	.12	−.08	−.03	.01	.16	.03*
						$R^2 = .28$
						Adjusted $R^2 = .28$
						$R = .53$

Note. BDI = Beck Depression Inventory. WBSI = White Bear Suppression Inventory.
*$p < .01$.

is, of course, interesting in its own right. The link between thought suppression and depression suggests that any tendency to suppress thoughts, even without a strong desire to avoid depression, may be tied to depression. The association of depression sensitivity with depression, in turn, suggests that a desire to escape the negative affective state may be associated with depression even when thought suppression is not present. Perhaps depression sensitivity engenders other avoidance techniques that are linked with depressive affect.

It is tempting to conclude from these findings that people who find negative thoughts most aversive and choose suppression as the strategy to deal with them suffer the greatest return of such thoughts and the depressive consequences of this return. Again, however, as we have cautioned in the interpretation of our other findings, the effects we have observed are correlational in nature, and interpretations suggesting other causal relations are fully plausible as well. Although it seems unlikely, it may be, for instance, that greater depressive affect happens to engender the unique combination of tendencies we observed—a desire to avoid the depression, along with a tendency to suppress thoughts.

Study 6: Thought Suppression and Emotional Reactivity

This study was done to examine in a different way whether chronic thought suppression inclines individuals toward reactivity to emotional

stimuli. We reanalyzed data collected by Wegner and Gold (1993, Experiment 1), with the addition of WBSI scores, to examine the degree to which thought suppression predisposes individuals toward emotional dishabituation, i.e., toward responding to multiple exposures of emotional stimuli with increasing arousal rather than with habituation.

Subjects in this study were asked to think about an old flame (girlfriend/boyfriend) for 9 minutes, with some subjects focusing on a hot flame (one that was still desired) and others focusing on a cold flame (one that was no longer desired). The manipulation of interest to Wegner and Gold was that for a second 9-minute period, subjects either tried not to think about their old flame or tried not to think about the Statue of Liberty. And in a final 9-minute period, subjects were asked to think about the old flame once more. Subjects who had previously suppressed the thought of a still-desired relationship showed elevated skin conductance levels (SCLs) at this time, whereas those who had not suppressed the thought or who no longer desired the relationship showed reduced SCLs. Wegner and Gold interpreted these results to suggest that trying not to think about a still-desired relationship may prolong emotional responsiveness to thoughts of the relationship.

The reanalysis we performed used the WBSI scores for a subset of the subjects ($N = 54$) to achieve a median split on thought suppression. These subjects were randomly dispersed among the conditions of the design. We examined SCLs during the initial and final periods in which subjects were asked to think about the old flame as deviations from 1-minute baselines taken prior to each period. Means are shown in Figure 1.

An analysis of variance (ANOVA) revealed a significant interaction of old flame (hot vs. cold), thought suppression (high vs. low WBSI score), and time (initial vs. final talk period), $F(1, 50) = 5.26$, $p < .03$. As can be seen in Figure 1, all subjects discussing the emotional topic of an old flame in the first period showed higher SCLs than those discussing the less emotional topic of a flame no longer burning. The subjects high in thought suppression, however, showed an increased electrodermal response even in a second period of talk about the hot flame, whereas those lower in thought suppression appear to have habituated to thoughts of the hot flame, nearly to the level of subjects talking about their cold flames.

This interaction was also observed in analyses that incorporated the thought suppression instruction variable that was the focus of Wegner and Gold's (1992) analysis, and no interactions were observed between

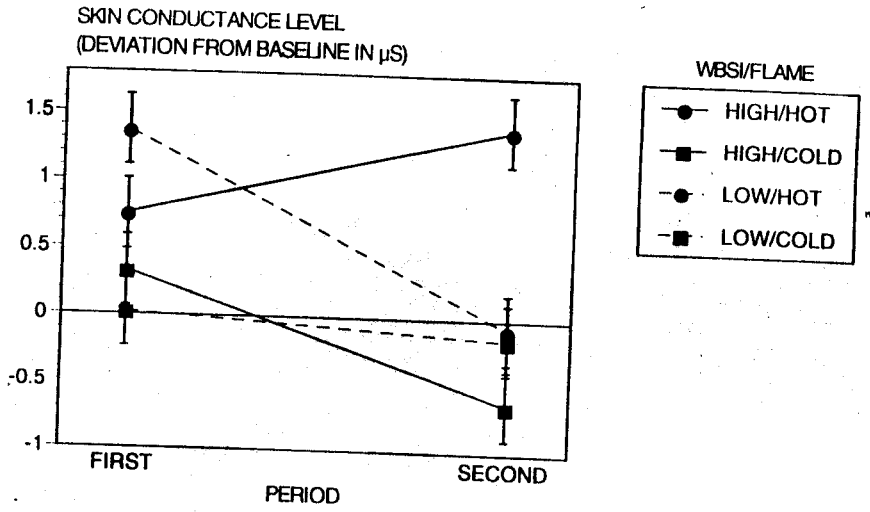

Figure 1
Skin Conductance Level Deviation from Baseline (in μSiemens) among Individuals High or Low in WBSI Thought Suppression Scores

Note. Measurements were taken in two 9-minute periods when subjects were thinking about either an old flame to whom they remain attached ("hot" flame) or one to whom they are now indifferent ("cold" flame). WBSI = White Bear Suppression Inventory.

thought suppression as manipulated through instruction and thought suppression as manipulated through subject selection. Although it will be important to examine the stability of these findings in future research designed specifically to explore individual differences in thought suppression, these results stand as a useful preliminary indication that thought suppression inclines individuals toward chronic emotional reactions. Presumably, because they meet emotional thoughts with suppression, these individuals continually cast themselves into the position of being surprised and alarmed by emotional thoughts whenever the thoughts return. Individuals who do not suppress thoughts, in turn, would stand to benefit from exposure to emotional stimuli in that the stimuli can indeed operate to promote habituation.

Although our findings do not address the development of severe chronic emotional reactions, it is valuable to notice that emotional responses that "do not go away" are the hallmark of a variety of subclinical and clinical conditions—most notably phobic and anxiety disorders. In the study of such disorders, it is now accepted that exposure to the

feared stimulus is the most effective form of treatment (Barlow, 1988). Our research suggests that thought suppression may be implicated in the etiology of such conditions, perhaps because with its use, individuals unwittingly rob themselves of the exposure to emotional stimuli that would allow normal habituation. Even worse, it may be that suppression amplifies subsequent reactions through processes that promote dishabituation. The person whose trait of thought suppression disposes him or her to activate cognitive strategies that subvert exposure to anxiety-producing stimuli would seem to be preparing to experience magnified and prolonged anxiety as a result.

DISCUSSION

The goal of this research was to establish a self-report measure of the tendency to suppress unwanted thoughts in hopes that such a measure might augment what has been learned about suppression through studies that instruct people to suppress. The results of our efforts are very promising in this regard. In essence, it seems that thought suppression measured as a self-report variable operates in much the way that laboratory studies of instructed thought suppression would suggest it should. Complementing the prior findings indicating that suppression may be a precursor of psychopathological reactions ranging from obsession to depression to anxiety, the present results show natural covariation between chronic suppression and several indicators of tendencies toward these reactions.

Features of Chronic Thought Suppression

These studies indicate that self-reported thought suppression fulfills several basic requirements of an individual difference measure. It can be measured reliably, it remains stable over time in individuals, and it is related in a sensible way to other individual-difference variables, such as obsession, depression, and anxiety, to which it is theoretically tied. Our studies indicate beyond this, however, that thought suppression may serve as a risk factor for some of these psychopathological conditions. We found that among people whose self-reports indicated that they might have problems with obsessional thinking (Study 4), high levels of thought suppression significantly predicted those for whom clinical indicators of obsession were indeed present. Thought suppression was not particularly useful as a predictor of clinical indicators of

compulsion, however, suggesting that suppression is tied more clearly to subsequent cognitive effects than to behavioral ones.

Several theoretical discussions of obsessive-compulsive disorder have suggested that compulsive behaviors develop as active strategies for the avoidance of anxiety-producing thoughts (e.g., Barlow, 1988; Rachman & Hodgson, 1980). If this is true, it makes sense that individuals who have developed effective behavioral strategies for dispelling unwanted thoughts would not additionally engage in the cognitive strategy of thought suppression. Perhaps thought suppression does not predict compulsive behavior because the two are alternative means of coping with unwanted thoughts. It may be, too, that engaging in behaviors that are intended to neutralize unwanted thoughts or solve the problems such thoughts represent somehow undermines the individual's tendency to self-report attempting to suppress those thoughts.

We also observed that thought suppression was useful as a way of understanding how people may become depression-prone. In Study 5, we found that individuals who were especially averse to negative thoughts, and who in addition showed tendencies toward suppression as measured by the WBSI, were particularly likely to score in the dysphoric range on the BDI. It turned out that depression sensitivity, thought suppression, and their interaction all made significant contributions to the prediction of BDI depression in this study. These results invite the conclusion that the tendency to dislike negative thoughts, and the inclination to react to them with suppression, is associated with depression severity. Further research examining the natural progression of these tendencies in the etiology of depression seems warranted.

The results of a study of electrodermal responses to emotional thoughts complemented this finding. In Study 6, we learned that subjects prone to thought suppression reacted more strongly to the thought of a still-desired old flame the second time they thought of this person. Subjects low in the tendency to suppress, in contrast, showed the "normal" run of habituation over time in this situation. Their SCLs declined from the first thought session to the second. By way of comparison, the study also showed that both high and low thought suppressors habituated over time to the unemotional thought of a past relationship that was no longer desired. These findings suggest that psychophysiological reactions to emotional thoughts may be prolonged and perhaps amplified across exposures among people who suppress thoughts. It may be that in general, anxiety- or arousal-producing thoughts experienced by suppression-prone individuals become recurrent emotional provoca-

tions, whereas such thoughts experienced by those who do not suppress merely become less provocative over time.

Throughout this article, we have tried to caution that our interpretations of these results are not the only possible interpretations at this time. Perhaps because they mirror a recent history of experimental evidence from which causal inferences can readily be drawn, our findings regarding the trait of thought suppression may be too easily overstated in this way. We know that suppression can cause indications of obsession, depression, and anxiety when it is imposed in experiments (Wegner, 1989, 1992), and the present results echo these observations quite faithfully. However, there remains the perfectly reasonable conclusion in all the present studies that thought suppression is the result of these problems, not the cause, or that both are caused by yet something else. This issue is open to interpretation here, and until more definitive work can be done to establish the time course of these phenomena in natural settings, firm conclusions cannot be drawn.

Suppression and Repression

Although our theorizing about a trait of thought suppression makes sense as a response to the literature on instructed suppression, it does not harmonize easily with much of what is known about trait measures of this kind. In particular, there is a long history of the study of repression as a personality trait, and it is important for us to reconcile our research with that work. Our measure calling for people to report on whether they suppress thoughts represents a radical departure from prior attempts to measure such processes, and it is important to understand in what direction this departure leads.

In defining repression as "the function of rejecting and keeping something out of consciousness," Freud (1915/1957, p. 105) gave life to a very broad concept and also created an unusually difficult measurement situation for personality research. His definition suggests the operation of a process that moves a person from one mental state (thinking about something) to another mental state (not thinking about that thing). The person who has repressed, in this light, must be identified with two points of measurement—one during the thinking and another when the not-thinking has been achieved. Simple self-reports of this process have seemed impossible to gather, as they require an individual to report no longer thinking about something.

A further complication has been introduced by controversy about

whether the process of repression is conscious or not. Most interpreters of Freud have noted his multiple examples of unconscious repressive processes that eradicate memory and have taken these to mean that repression is indeed unconsciously initiated. Following Anna Freud (1936), it has become customary to speak of suppression as the conscious counterpart of unconscious repression. Although Erdelyi (1993) has argued correctly that this custom is not consistent with Freud's aforementioned broad definition of repression, it has remained the fashion in the study of repression as a personality trait to assume that the person is generally unaware that repression is going on—not only after it has happened, but even beforehand. This means that to measure repression as it is currently understood, researchers have turned to the study of *failed* repression—the self-reported presence of unpleasant, threatening, or anxiety-producing thoughts (Tudor & Holmes, 1973).

Our approach and measure stand in conspicuous contrast with the traditional study of the trait of repression. The measure we have devised is not a measure of failed suppression (or successful suppression); rather, it is a measure of the *conscious desire to suppress thoughts*. In this sense, it is a measure of motivation or effort rather than performance or ability. We do not know a priori whether people who report thought suppression are good or bad at it, although it appears from the strong negative correlation between the WBSI and repression (as tapped by the Repression-Sensitization Scale) that people who try to suppress thoughts are in fact very bad at it.

At some point, it may be possible to understand more fully the relationship between the desire for conscious suppression and the performance of repression. But for now, it is most important not to get them confused. Previous researchers have mistakenly used the notion of repression as an umbrella term for a process that operates similarly in its conscious and unconscious forms. Byrne (1961) did not rule out conscious suppression in his discussion of the Repression-Sensitization Scale, for instance, and in fact gave some examples of it. Erdelyi (1993) has pointed out that researchers focusing on the use of anxiety and social desirability scales to measure repression (i.e., Weinberger, Schwartz, & Davidson, 1979) have been equally likely to embrace conscious repressive processes at times. For example, Schwartz (1990) allows that repression measured in this way might be conscious, as does Weinberger (1990). Our findings lead us to conclude that chronic conscious thought suppression is in fact quite unlike the trait of repression as traditionally conceived, and we wish to keep this distinction sharp.

CONCLUSION

This research was a first step toward the measurement and understanding of the chronic tendency to suppress thoughts. In developing an instrument to measure thought suppression, we learned that this mental control strategy is indeed something that individuals report about reliably. Reports of chronic thought suppression are related in turn to reports of obsession and expressions of negative affect such as depression and anxiety. Studies of the predictive validity of the thought suppression measure revealed that it is a useful construct for anticipating whether individuals will develop obsessive thoughts (but not compulsive behaviors), whether individuals who report wishing they were not depressed will in fact be depressed, and whether individuals who are exposed to emotion-producing thoughts will fail to habituate to them over time. These findings seem to capture in spirit, if not in detail, some of Freud's ideas about the dire consequences of trying not to think.

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W B S I

This survey is about thoughts. There are no right or wrong answers, so please respond honestly to each of the items below. Be sure to answer every item by circling the appropriate letter beside each.

A	B	C	D	E
Strongly Disagree	Disagree	Neutral or Don't Know	Agree	Strongly Agree

A B C D E 1. There are things I prefer not to think about.

A B C D E 2. Sometimes I wonder why I have the thoughts I do.

A B C D E 3. I have thoughts that I cannot stop.

A B C D E 4. There are images that come to mind that I cannot erase.

A B C D E 5. My thoughts frequently return to one idea.

A B C D E 6. I wish I could stop thinking of certain things.

A B C D E 7. Sometimes my mind races so fast I wish I could stop it.

A B C D E 8. I always try to put problems out of mind.

A B C D E 9. There are thoughts that keep jumping into my head.

A B C D E 10. There are things that I try not to think about.

A B C D E 11. Sometimes I really wish I could stop thinking.

A B C D E 12. I often do things to distract myself from my thoughts.

A B C D E 13. I have thoughts that I try to avoid.

A B C D E 14. There are many thoughts that I have that I don't tell anyone.

A B C D E 15. Sometimes I stay busy just to keep thoughts from intruding on my mind.