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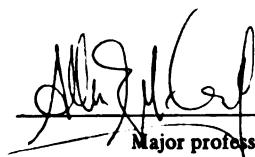
**Self-Concept Organization and the Suppression of
Self-Relevant Thoughts**

presented by

Jeanette M. Renaud

has been accepted towards fulfillment
of the requirements for

Master's degree in **Psychology**


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**SELF-CONCEPT ORGANIZATION AND THE SUPPRESSION OF
SELF-RELEVANT THOUGHTS**

By

Jeanette M. Renaud

A THESIS

**Submitted to
Michigan State University
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ABSTRACT

SELF-CONCEPT ORGANIZATION AND THE SUPPRESSION OF SELF-RELEVANT THOUGHTS

By

Jeanette M. Renaud

The rebound effect associated with thought suppression has been found in research focusing on the suppression of both novel stimuli and stereotypical thoughts. However, research examining the suppression of self-relevant thoughts has been less successful in demonstrating the effect. Kelly and Kahn (1994) suggest that this may be because individuals have more experience suppressing self-relevant thoughts and, thus, have developed a network of successful distracters to use during times of suppression. The current study examined the role of self-concept organization in affecting successful thought suppression. As predicted, following suppression of self-relevant information while using other aspects of one's life as distracters, lower self-complexity was related to greater rebound effects than was greater self-complexity. A number of ancillary hypotheses and exploratory hypotheses were also examined, and their implications are discussed.

Dedicated to Susanne Atherton

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INTRODUCTION

Throughout our daily lives, we are often faced with the desire to avoid certain thoughts. For example, we may want to avoid thoughts about relationship problems, professional failures, and social embarrassments. Ironically, research has shown that attempts to suppress unwanted thoughts are often met with undesired consequences. For example, Wegner, Schneider, Carter, and White (1987) found that participants who attempted to suppress thoughts of a white bear subsequently thought about a white bear more often than those who had not attempted to suppress such thoughts. This consequence of thought suppression is known as the rebound effect. In particular, it refers to the tendency to think about a previously suppressed thought more after initial constraints to suppress it are removed than when such initial constraints were never in place.

Wegner's (1994) model of mental control suggests that this effect is a result of two processes that operate when one is engaged in thought suppression. These processes work in tandem but have different goals and are referred to together as "ironic processes." The goal of the automatic monitoring process is to scan consciousness for evidence of the unwanted thought, whereas the goal of the controlled operating process is to search for thoughts that will distract the mind from the unwanted thought. Ironically, each time the monitoring process encounters evidence of the unwanted thought, it focuses the mind's attention on the unwanted thought, sabotaging the work of the controlled process.

Consequently, the monitoring process increases the accessibility of the unwanted thought by priming it each time it is encountered. Through this sporadic priming, the monitoring process ironically makes the unwanted thought more accessible, making suppression more difficult and rebound more likely.

As an extension of Wegner's (1994) model, Macrae, Bodenhausen, Milne, and Jetten (1994) posit that the monitoring process itself can increase the accessibility of unwanted thoughts during thought suppression. In particular, these researchers suggest that the intention to suppress a thought initiates the operation of both the operating process and the monitoring process, as suggested by Wegner's (1994) model. But as the monitoring works toward its goal of scanning consciousness for the unwanted thought, it ironically primes the unwanted thought at a low but continuous level, regardless of the work of the operating process.

Whereas initial studies investigated the effects of suppressing thoughts about novel stimuli (e.g., white bears), more recent studies have investigated the effects of suppressing stereotypical information about various targets. This research has shown that stereotype suppression results in greater accessibility and better recall for stereotypical information, but poorer processing of non-stereotypical information (Macrae, Bodenhausen, Milne, & Wheeler, 1996). It has also been shown that stereotype suppression can influence judgments of and behavior toward those to whom the stereotypes may apply (Macrae et al., 1994; cf., Monteith, Sherman, & Devine, 1998).

Although there may be times when one would like to suppress novel stimuli and stereotypical thoughts about others, it seems that the thoughts one would most often want to suppress are negative thoughts related to oneself. For example, after getting a poor grade on an exam, a student may try to focus on more pleasant thoughts of the upcoming weekend in an attempt to avoid thoughts about the academic failure. In fact, Baumeister (1991) has suggested that some individuals will take extreme measures to avoid focused attention on themselves because such attention brings their negative qualities to mind. For instance, he argues that alcoholism, masochism, and even suicide are acts performed with the primary purpose of escaping self-awareness.

While such acts may distract oneself from self-focused attention, they also tend to lead to very undesirable consequences. Therefore, it is important to understand alternative processes by which people distract themselves from negative self-relevant information and to understand the conditions under which thought suppression may be more or less successful. It seems plausible to think that what we focus our attention on while attempting thought suppression may influence our ability to suppress unwanted thoughts and also the extent to which these thoughts rebound.

For example, Wegner et al. (1987) found that focusing individuals on a specific distracter (e.g., a red Volkswagen) during suppression resulted in an attenuation of the rebound effect. Subsequent investigators (e.g., Wenzlaff, Wegner, & Klein, 1991) have suggested that this focused distraction is not the typical strategy individuals employ while attempting to suppress unwanted

thoughts. The more typical approach to suppression seems to be unfocused distraction, in which individuals select things in the immediate environment or accessible experiences and memories to distract themselves. Thus, individuals tend to sample a variety of distracters, rejecting each and selecting a new one each time the unwanted thought recurs. This suggests that the distracter used could potentially facilitate or undermine suppression. More specifically, selecting an effective distracter could result in more successful suppression of unwanted thoughts for a longer period of time. Selecting a less effective distracter, on the other hand, could result in more limited success for a shorter period of time. For instance, trying to suppress a thought that is associated with many other thoughts may undermine suppression, whereas trying to suppress a thought that is not associated with many other thoughts should facilitate suppression. And similarly, selecting a distracting thought that is associated with many other thoughts may undermine suppression, whereas selecting a distracting thought that is not associated with many other thoughts should facilitate suppression. In this vein, the way in which information about the self is cognitively organized may be related to the ability to suppress unwanted self-relevant thoughts.

Interestingly, previous investigations involving the suppression of self-relevant thoughts have been less successful in demonstrating the rebound effect. For example, Kelly and Kahn (1994) had participants either suppress one of their own personally intrusive thoughts or thoughts of a white bear. The rebound effect was found for those suppressing thoughts of a white bear, but

not for those suppressing their own personally intrusive thought. These researchers suggested that the failure to demonstrate the rebound effect with personally intrusive thoughts may be due to the prior experience individuals have in suppressing such thoughts. It may be that the individuals have developed a network of distracter thoughts that are used whenever the unwanted thought is encountered. Such a network of distracter thoughts could involve the organization of the self-concept itself. With this in mind, the following discussion will begin by focusing on self-complexity, which is one way in which the organization of the self-concept can vary among individuals. In particular, the potential role of self-complexity in the suppression of negative self-relevant thoughts will be discussed and a number of research hypotheses will be offered. Afterwards, a number of ancillary hypotheses associated with thought suppression and self-complexity separately will be discussed. And lastly, the role of another way in which the self-concept can vary among individuals will be discussed. More specifically, the role of compartmentalization in the suppression of negative self-relevant thoughts will be explored, with a number of exploratory hypotheses paralleling the self-complexity hypotheses being offered.

As mentioned above, one way in which the organization of the self-concept can vary among individuals is in its complexity (Linville, 1985). Self-complexity involves both the number of self-aspects and the amount of interrelatedness among those self-aspects. Greater self-complexity is revealed by a greater number of self-aspects that are more independent of one another. Lower

self-complexity, on the other hand, is revealed by fewer self-aspects that are more interrelated with one another.

Research on self-complexity has suggested that it is related to differences in affective responses to life events. In particular, the affective-extremity hypothesis associated with self-complexity suggests that greater self-complexity is related to more moderate affect in response to life events. For instance, Linville (1985) found that following either positive or negative feedback about an important aspect of one's life, individuals greater in self-complexity reported more moderate affect than individuals lower in self-complexity who reported more extreme affect (positive and negative, respectively). Linville (1985) argues that these differences in affective reactions to positive and negative events by individuals who vary in self-complexity occur because of affective spillover. Because greater self-complexity involves a larger number of independent self-aspects, there is less affective spillover among different self-aspects when emotional events impinge upon one's life. Thus, a relatively smaller proportion of self-aspects may be affected at any one time and, therefore, a small proportion of the self is implicated during emotional episodes. For example, consider a woman who sees her roles of mother, wife, doctor, and friend as independent of one another. If she has a bad day at work, the negative affect related to her work is less likely to "spill over" into her roles of mother, wife, and friend. Individuals lower in self-complexity, on the other hand, have fewer self-aspects that are more interrelated with one another. Thus, a greater proportion of their self-aspects may be affected by positive and negative

life events, which, in turn, should magnify the intensity of the affect experienced. In this case, if a woman who works with her husband in a family business has a bad day at work, the negative affect related to her work aspect is more likely to “spill over” into her roles of wife and mother. The same would be true for positive events as well.

An important issue to consider is how the organization of the self-concept may be related to the ability to moderate one’s affective responses to life events. One way in which individuals can moderate the effects of negative thoughts about the self is to focus attention away from the self. For example, Dixon and Baumeister (1991) found that self-complexity is a moderator in the relationship between failure and escape from self-awareness. In particular, they found that following negative self-relevant feedback, individuals lower in self-complexity attempted to reduce self-awareness faster than individuals greater in self-complexity. This may be because a greater proportion of one’s self-concept is affected for those lower in self-complexity than for those greater in self-complexity. Consequently, those lower in self-complexity have a greater need to focus attention away from the self following negative feedback than do those greater in self-complexity.

Although there may be instances when it is possible to moderate the effects of a negative event by focusing attention away from the self, there may be times when such an escape is not possible or desirable. In these cases, individuals may try to focus on other aspects of themselves in order to avoid negative self-relevant thoughts associated with a particular self-aspect. Individuals greater in

self-complexity, by definition, have more potential internal distracters (i.e., self-aspects) that are relatively independent of one another than do individuals lower in self-complexity. Thus, suppressing negative information about the self while focusing on internal distracters (i.e., other self-aspects) should be a relatively easier task for individuals greater in self-complexity than for individuals lower in self-complexity. External distracters, on the other hand, should be equally available to individuals both higher and lower in self-complexity, resulting in no difference in rebound when the distracter used is external to the self. Therefore, it is predicted that those lower in self-complexity will exhibit greater rebound following suppression of negative self-relevant information only when focusing on internal distracters.

Interestingly, it may be that the ability to suppress negative self-relevant information about a particular self-aspect underlies much of the affective-extremity hypothesis discussed previously. Because individuals greater in self-complexity have more internal distracters available that are relatively independent of one another, they may be better able to moderate their affective responses to negative information by focusing on other unrelated self-aspects that do not implicate the feedback-relevant domain. And because individuals lower in self-complexity have fewer internal distracters available, they are less able to moderate their affective responses, resulting in more extreme affective experiences. In cases where feedback about the self is negative, the ironic monitoring process should increase the relative accessibility of negative information for the individual. Individuals lower in self-complexity focusing on

internal distracters will be more likely to prime more self-aspects related to the negative information due to the greater number of associative links leading back to the to-be-avoided self-aspect. Therefore, it is predicted that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity will reveal self-judgments greater in negativity.

Further, this accessibility of negative self-relevant information may lead to an avoidance of tasks related to the feedback domain. As Dixon and Baumeister (1991) found, following negative feedback, those lower self-complexity tended to put forth less effort into a subsequent task. Because those lower in self-complexity may be less able to escape negative self-relevant information when using internal distracters, they may have a greater need to avoid similar, potentially negative, situations. Hence, it is predicted that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity will be more likely to avoid performing a task similar to that for which negative self-information was provided.

And finally, the accessibility of this negative self-relevant information may also make it more difficult to alter one's thoughts after finding out that the negative self-information was not accurate. Previous research on such belief perseverance effects (e.g., Ross, Lepper, & Hubbard, 1975) has demonstrated that participants' beliefs about information given to them in experimental studies often tends to persist even after they have been told that the information was bogus. The current research will explore the possibility that some individuals

are more susceptible to such effects than others. Thus, it is predicted that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity will manifest a greater perseverance of negative beliefs even after being told that the negative self-information was not accurate.

In addition to the hypotheses above, a number of ancillary hypotheses separately involving self-complexity and thought suppression will be tested. As mentioned previously, Macrae et al. (1994) suggest that the process of thought suppression itself increases the accessibility of the to-be-suppressed thoughts. The methods to be employed in the current study allow for a test of this hypothesis. Based on research by Macrae et al. (1994), it is first expected that participants who previously suppressed thoughts of their failure on the task (which, purportedly, is diagnostic of their academic aptitude) would reveal greater accessibility of student-related thoughts than would participants who did not previously suppress such thoughts. Based on the logic of the above hypotheses for self-complexity, it is also expected that this relationship will be moderated by self-complexity and the type of distracter used during suppression. More specifically, it is expected that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity will demonstrate greater accessibility of student-related thoughts.

Secondly, because self-esteem is an important construct in assessing self-relevant affect, many researchers have attempted to discover a relationship

between self-complexity and self-esteem. For instance, Campbell, Scratchley, and Chew (1991) found a positive relationship between them, suggesting that greater self-complexity is related to higher self-esteem. Woolfolk, Novalany, Gara, Allen, and Polino (1995), on the other hand, found a negative relationship between them, suggesting that greater self-complexity is related to lower self-esteem. And finally, Niedenthal, Setterlund, and Wherry (1992) found no relationship between them at all. The relationship between self-complexity and self-esteem will also be examined in the current study. Based on the contradictory findings in the literature, no directional prediction will be made.

The third ancillary hypothesis involves the affective-extremity hypothesis associated with self-complexity. As mentioned previously, this hypothesis suggests that greater self-complexity is related to more moderate affect in response to life events, whereas lower self-complexity is related to more extreme affect in response to similar life events. In an examination of this hypothesis, Linville (1985) found that those lower in self-complexity reported greater change in mood and self-evaluation following self-relevant feedback than did those greater in self-complexity. The methods employed in the current study allow for a replication of this finding.

And finally, the conceptual process of thought suppression and subsequent rebound suggests that the more an individual tries to suppress a thought, the more that individual subsequently ends up thinking about it, regardless of the organization of the self-concept. As described by Wegner et al. (1987), "...the person who is most successful in carrying out the suppression may eventually

be the most susceptible to the resulting obsession” (pp. 11-12). This suggests that there should be an inverse relationship between initial suppression and subsequent expression within individuals, such that the less an individual mentions the unwanted thought during suppression the more that individual tends to mention it during subsequent expression. Interestingly, previous investigations (i.e., Wegner et al., 1987) have not found such correlations for suppression groups. The current research will examine the correlations between the suppression and the expression periods for the suppression groups.

In addition to self-complexity, information about the self can also vary in terms of its content. In particular, the contents of information about the self can be either positively or negatively valenced. Showers (1992a) has examined the extent to which positive and negative information about the self is compartmentalized among one’s self-aspects. Specifically, individuals with compartmentalized self-information tend to have either predominantly positive or predominantly negative information about the self contained within different self-aspects. Individuals with self-information that is more evaluatively integrated, on the other hand, tend to have both positive and negative information mixed within their different self-aspects.

Investigating the correlates of compartmentalization, Showers (1992a, 1992b) found that compartmentalized organization is related to more extreme positive or negative affective responses. The valence of the affect typically experienced by the individual is mediated by differential importance, which

refers to the relative importance individuals place on particular self-aspects (Pelham & Swann, 1989). The product of compartmentalization and differential importance is used to differentiate between those who are positively compartmentalized and those who are negatively compartmentalized. In particular, positive compartmentalization refers to an organization in which the individual perceives self-aspects that are predominantly positive as more important, whereas negative compartmentalization refers to an organization in which the individual perceives self-aspects that are predominantly negative as more important. Consequently, those with positive compartmentalization tend to have more positive self-evaluations and more positive affect in general, whereas those with negative compartmentalization tend to have more negative self-evaluations and more negative affect in general (Showers, 1992a).

Showers (1992b) suggests that the effects of compartmentalization can best be understood by conceptualizing the self-concept as an associative network model of memory. Such a model suggests that when one item of information is activated, other items that are strongly associated with it in memory are also more likely to be activated. In terms of compartmentalization, this suggests that when a particular self-aspect is activated, all of the information within that self-aspect is likely to be activated. For negative-compartmentalized individuals, this suggests that when a negative self-aspect is activated the attributes (which should be predominantly negative) within that self-aspect will also be activated. And because these individuals have relatively more negative self-aspects that are important, negative self-aspects and the contents therein will be activated

more often, leading to more negative self-evaluation and more negative affect being experienced in general. On the other hand, positive-compartmentalized individuals tend to have few, if any, negative self-aspects that are important. Thus, their positive self-aspects and the contents therein will be activated more often, leading to more positive self-evaluation and more positive affect being experienced in general. Finally, individuals who are more evaluatively integrated tend to have self-aspects that are neither predominantly positive nor predominantly negative. Therefore, they tend to have relatively moderate self-evaluation and experienced affect.

Each of the following hypotheses involving compartmentalization parallels those previously described involving self-complexity. Because the development of theory related to compartmentalization is more recent and less explored in the literature, the current work will examine these hypotheses in an exploratory fashion.

The first exploratory hypothesis involves the potential role of compartmentalization in thought suppression. In particular, individuals with compartmentalized self-aspects have a relatively high degree of positive or negative attributes contained within different self-aspects, so it may be more difficult for them, as opposed to more evaluatively integrated individuals, to suppress thoughts related to a particular self-aspect. More specifically, those who have many negatively compartmentalized self-aspects, as opposed to those who have more evaluatively integrated self-aspects, may find it more difficult to suppress negative self-relevant thoughts related to a particular

self-aspect. This is because they have fewer positive things, either within the to-be-avoided self-aspect or with other self-aspects in general, on which to focus on in order to distract themselves from the negative unwanted thought. Those who have many evaluatively integrated self-aspects, on the other hand, may find it less difficult to suppress negative self-relevant thoughts because they have other less negative things (i.e., the positive attributes within their self-aspects) on which to focus. And those who have many positively compartmentalized self-aspects may find it relatively easy to suppress negative self-relevant thoughts because they have many positive self-aspects and attributes therein on which to focus.

As opposed to either focused or unfocused distraction, using one's own self-aspects as distracters during suppression can be thought of as semi-focused distraction. Individuals are focused on themselves but will probably select different self-aspects, rejecting each and selecting a new one each time the unwanted thought recurs. Although it may be reasonable to suggest that individuals with negative compartmentalization or evaluative integration may select a particular positive self-aspect on which to focus in times of negativity, this assertion is not consistent with previous findings. For example, as mentioned previously, Showers (1992a, 1992b) found that negative-compartmentalized individuals tend to have more negative self-evaluation and more negative affect in general. This suggests that these individuals are not able to focus on a particular positive self-aspect as a means of avoiding

negative self-thoughts. If they could, they would not exhibit the negative affect observed in previous research.

Thus, those with many important negative self-aspects (i.e., negative compartmentalization), as compared to those with many important positive self-aspects (i.e., positive compartmentalization), may be subject to greater rebound following suppression of negative self-relevant information while focusing on internal distracters. This will result because their available negative self-aspects will be less likely to distract them from the unwanted thought for a long period of time. Each important self-aspect (and the contents therein) encountered is likely to be negative and will, therefore, be a less effective distracter. Consequently, negatively compartmentalized individuals will tend to sample from their various self-aspects more often than positively compartmentalized individuals. And because the monitoring process primes unwanted thoughts during suppression, the to-be-avoided self-aspect will be more accessible than other self-aspects. Hence, it is more likely that the unwanted self-aspect will be encountered during each distracter search. In sum, the greater frequency of searches and the greater accessibility of the to-be-avoided self-aspect together should result in a greater likelihood of selecting the self-aspect associated with the unwanted thought more often, resulting in greater rebound for negatively compartmentalized individuals.

Therefore, it is expected that negative compartmentalization will be related to greater rebound following suppression of negative self-relevant thoughts while focusing on internal distracters. Alternatively, positive

compartmentalization will be related to less rebound following suppression of negative self-relevant thoughts while focusing on internal distracters. And, evaluative integration will be related to relatively moderate rebound following suppression of negative self-relevant thoughts while focusing on internal distracters.

Furthermore, research has shown that the reactions of compartmentalized individuals tend to be more extreme than evaluatively integrated individuals. The ability to suppress negative self-relevant thoughts may underlie these different affective reactions.

As previously discussed for those lower in self-complexity, negative-compartmentalized individuals should be more likely to prime more negative than positive information about the self during suppression while focusing on internal distracters. This accessibility may lead to more negatively biased judgments of the self. So, it is expected that following suppression of negative self-relevant information while focusing on internal distracters, negative-compartmentalized individuals will reveal self-judgments greater in negativity.

In addition, this greater accessibility of negative self-relevant information may lead to an avoidance of tasks related to the feedback. Therefore, it is expected that following suppression of negative self-relevant information while focusing on internal distracters, negative-compartmentalized individuals will be more likely to avoid performing a task similar to that for which negative self-information was provided.

And finally, the accessibility of this negative self-relevant information may also make it more difficult to change one's beliefs about the information after finding out that the negative information was not accurate. Therefore, it is expected that following suppression of negative self-relevant information while focusing on internal distracters, negative-compartmentalized individuals will manifest a greater perseverance of negative beliefs even after being told that the negative self-information was not accurate.

METHOD

Participants and Overview

Ninety-eight introductory psychology students at Michigan State University participated in the study for extra credit. The study consisted of two sessions. During the first session, participants completed the self-complexity, compartmentalization, and positive importance measures via a computer program on the university's network server.

During the second session (which took place in the lab), participants were first informed of the tasks to be completed during the experiment. It was explained that by signing the consent form, they were agreeing to allow their voices to be audio taped and used as data for the study. Upon providing consent, they began the experimental session by completing the initial mood and self-esteem measures. They then completed and received negative feedback on an analytical task, which presumably assessed academic success in college. Following this, they completed the mood and self-esteem measures

for a second time to examine the extent to which the negative feedback had an impact on their mood and self-esteem.

Participants then read instructions on how to report their stream of consciousness. They performed this task in three separate 5 min periods. During the first period, all participants were asked to verbally express their ongoing thoughts, without filtering them in any way. The instructions explicitly stated that they were to express any and all thoughts even if the thoughts involved the feedback from the analytical task and how the feedback may be related to their academic life. For the second period, two-thirds of the participants were asked to suppress the negative feedback from the analytical task and their academic life in general. One-half of these suppression participants did so while focusing on other self-aspects of themselves, whereas the other one-half did so while focusing on a white bear. The remaining one-third of the participants expressed their ongoing thoughts, including thoughts about the feedback and how the feedback may be related to their academic life. For the third period, all participants were asked to express their thoughts again, including thoughts about the feedback from the analytical task and how this feedback may be related to their academic life.

Immediately following the third period, all participants completed a word completion task to measure the accessibility of student-related thoughts. The participants then indicated how well they would perform on a similar analytical task if given another opportunity. They then rated both the extent to which they would like to perform another analytical task and the extent to which they would

like to perform a task that assesses creative abilities. Following this, they were debriefed about the true nature of the study. During this debriefing, they were told that the negative feedback was completely false. Afterwards, they were asked to estimate the number of items that they think they actually answered correctly on the analytical task in order to assess belief perseverance.

Self-Complexity and Compartmentalization Measures

In the first session, participants performed a trait sort task similar to that used by Showers (1992a). They completed this task via a computer program in which they were presented with 40 different traits, half of which were positive and half of which were negative. They sorted the traits into groups that described different and important aspects of themselves. They also provided a label to describe each of the groups they formed. For example, a participant may have sorted “intelligent,” “diligent,” and “focused” into one group and labeled it as “student.” This task is comparable to that used by Linville (1985, 1987) for assessing self-complexity.

The statistical measure H , developed by Scott (1969) and used by Linville (1985, 1987), was calculated to obtain a self-complexity score for each participant. Scott’s H takes into account the number of self-aspects generated and the interrelatedness among the traits within those self-aspects. The following formula is used to calculate Scott’s H :

$$H = \log_2 n - (\sum_i n_i \log_2 n_i) / n,$$

where n is the total number of traits available to the participant (40 in this case) and n_i is the number of traits that occur within each particular group

combination (i) across the self-aspects constructed by the participant. Scott's H can be understood as an index of the minimal number of particular combinations of traits needed to reproduce a participant's whole sort. Appendix A demonstrates the calculation of H for a participant in the current study.

Following Showers (1992a), a phi coefficient was calculated to obtain a compartmentalization score for each participant. The phi coefficient is based on the chi-square statistic and takes into account the distribution of positive and negative traits among each participant's self-aspects. It is based on a contingency table in which the columns represent the self-aspects generated and two rows represent the number of positive and the number of negative traits within each self-aspect. Mathematically, phi was computed as the square root of the chi-square statistic divided by the total number of traits within each participant's sort. Phi can range from 0 (perfectly integrated) to 1 (perfectly compartmentalized). More generally, phi compares the ratio of positive to negative traits within each self-aspect to the overall ratio of positive to negative traits for the participant's whole sort. If the ratio across all self-aspects matches the overall ratio for the whole sort, the number of positive and negative traits (i.e., the rows of the contingency table) is independent of the self-aspects (i.e., the columns of the contingency table). Such a match would result in a phi of zero, which would be indicative of an evaluatively integrated sort. If, on the other hand, the ratio across all self-aspects does not match the overall ratio for the whole sort, the number of positive or negative traits is not independent of

the self-aspects. This would result in a phi closer to one, which would be indicative of a more compartmentalized sort.

Aspect Importance and Valence Measures

Participants also rated the importance of each self-aspect on a scale that ranged from 1 (somewhat important) to 7 (extremely important). In addition, they rated how the self-aspect generally makes them feel on a scale that ranged from -7 (very negative) to +7 (very positive). To distinguish between positive- and negative-compartmentalized organization, previous investigators have used the differential importance of positive and negative self-aspects. This index is the Pearson correlation coefficient of participants' valence and importance ratings across all of their self-aspects. Higher correlations indicate that positive self-aspects are rated as more important than negative self-aspects. Because a differential importance score cannot be calculated when a participant has just one self-aspect, the present research used a slightly different approach to distinguish between positive- and negative-compartmentalized organization. More specifically, a positive importance score was calculated for each participant by first multiplying the ratings of valence by the ratings of importance for each of their self-aspects. Then the mean product across all of their self-aspects was computed. Larger positive values indicate that positive self-aspects were rated as more important than negative self-aspects.

Mood Measure

During the second session, participants were run individually in the lab. They first completed the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). This measure includes 10 positive mood adjectives (e.g., “proud”) and 10 negative mood adjectives (e.g., “upset”) based on 5-point scales ranging from 1 (very slightly) to 5 (extremely). The items were presented on a computer one at a time. Participants were told to answer the items in terms of how they felt right at that very moment.

Self-Esteem Measure

Participants also completed Rosenberg’s (1965) self-esteem scale. This scale includes 10 items (e.g., “I take a positive attitude toward myself” and “At times I think I am no good at all”) that are based on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). Items were summed such that larger scores indicated greater self-esteem. Theoretically, the scale can range from 10 (low self-esteem) to 40 (high self-esteem). Again, the items were presented on a computer one at a time. After the last item was presented, a bogus error message appeared on the computer screen. When the participant called for the experimenter, the experimenter acted surprised and told the participant that the computers were old and somewhat unreliable.

Analytical Task

While the experimenter worked on solving the computer problem, the participants were asked to move to another computer to solve 24 moderately difficult analogy items taken from past Graduate Record Exams. To emphasize

the importance of its feedback, they were told that this task is often used to predict success in college. After completing the task, the participant's score was presented on the computer screen, with an indication that the score was in the bottom 10% of all students who have previously completed the task.

The participants were then told that their responses to the previous mood and self-esteem items were lost due to the prior computer error. Because of this purported error, they were asked to complete the items a second time based on how they felt right at that very moment. Thus, this second administration served as the post-feedback (Time 2) measures of mood and self-esteem.

Suppression Ability and Rebound Measures

Participants then read instructions adapted from Pope (1978) and used by Wegner et al. (1987) on how to report their stream of consciousness. These instructions ask participants to continuously verbalize their ongoing thoughts without filtering them in any way. Similar to the procedure used by Wegner and Gold (1995), participants verbally reported their thoughts during three 5-min periods by themselves in a private room while being audio recorded. During the initial expression period, all participants expressed their ongoing thoughts, including those about the feedback provided on the analytical task and how this feedback may be related to their academic life.

During the suppression period, two-thirds of the participants were asked to suppress the negative feedback information provided by the score on the analytical task and their academic life in general. Thus, the student self-aspect

served as the to-be-suppressed self-aspect. This self-aspect was selected because participants were college students, and, therefore, their student self-aspect should be important to them. Previous research (e.g., Linville, 1985; Niedenthal et al., 1992) has found that feedback related to intelligence and scholastic performance has affective consequences for college student participants. One-half of the suppression participants suppressed their student self-aspect while focusing on another aspect of themselves (internal suppressers), whereas the other one-half suppressed their student self-aspect while focusing on a white bear (external suppressers). The internal suppresser participants read the following instructions, which were based on those used by Wegner et al. (1987):

For the second five-minute period, please verbalize your thoughts as you did before, with one exception. This time, try not to think about the feedback you were given on the analogy task or anything else related to your academic life, but mention it if you do. Instead, think about one or more of the other groups that you described in the first experiment listed in this envelope (they were given a few moments to look at the labels of the groups they had described in the first session of the experiment).

Again, remember, don't think about the feedback or your academic life, but mention it if you do.

The external suppresser participants read similar instructions, but were told to think about a white bear instead. The remaining participants (expressers) performed a task similar to the initial expression period in which they verbally

expressed all of their ongoing thoughts, including thoughts about the feedback given on the analytical task and how this feedback may be related to their academic life, without filtering them in any way. Assignment to this between-subjects manipulation (internal suppresser, external suppresser, or expresser) was randomly determined. For the final period, all participants reported their thoughts, including thoughts about the feedback given on the analytical task and how this feedback may be related to their academic life. Appendix B contains the verbatim instructions given for each period.

The rebound measures were based on the number of times student-related thoughts were mentioned by the suppressers (as compared to the expressers) during the final expression period. An additional index of rebound included the duration of mentions of the previous to-be-suppressed thoughts.

Accessibility Measure

All participants were then given a word completion task to measure the accessibility of student-related thoughts. This task consisted of 27 items that could be filled in with letters that would create either student-related or non-student-related words. They were asked to complete the task as quickly as possible to ensure that their responses reflected accessible concepts. Two examples of items are “smart” and “dull” (see Appendix C for the complete list of items). Each item that was completed as a student-related word was given a score of one. These scores were summed, with larger scores indicating greater accessibility of student-related thoughts.

Self-Judgment Measure

Participants then indicated how well they thought they would perform on a similar analytical task if given another opportunity on a scale that ranged from 1 (very poorly) to 7 (very well).

Subsequent Task Preference

They then rated both the extent to which they would like to complete another analytical task and the extent to which they would like to complete a different task that assesses creative abilities unrelated to academic abilities on 7-point scales that ranged from 1 (not at all) to 7 (very much).

Belief Perseverance

Participants were then debriefed about the study. During this debriefing, they were told that the feedback from the analytical task was completely false and in no way related to their actual performance or to their potential success as a college student. Following this disclosure, participants indicated the number of items (from 0 to 24) that they thought they actually answered correctly on the analytical task.

RESULTS

Table 1 (Appendix D) presents descriptive statistics for the primary variables used in the inferential analyses.

The audio tapes were analyzed for evidence of rebound effects by two independent judges who were unaware of the experimental hypotheses. Both the number of mentions and the duration of mentions of the previous to-be-suppressed thoughts were assessed by the judges. Numbers of mentions were

counted if they occurred in one of two ways. First, if a student-related thought (i.e., an unwanted thought) occurred between two non-student-related thoughts, it was considered a mention. Secondly, if a 5 s or longer pause occurred between two student-related thoughts, two mentions were counted. The duration of mentions was simply measured as the number of seconds the participant expressed each student-related thought. These values were summed separately for each of the three periods. Interjudge reliability was assessed by examining the correlation of the measurements between the two judges. Strong positive correlations were found for both the number of mentions, $r = .63$, $p < .001$, and the duration of mentions, $r = .83$, $p < .001$, indicating good interjudge reliability. The measurements of the two judges were then averaged.

Tests of Primary Hypotheses

Each of the primary hypotheses was tested by conducting a multiple regression analysis with H , two contrast vectors (one comparing the two suppresser groups to the expresser group, the other comparing the internal suppressers to the external suppressers) and their interactions with H regressed onto the corresponding dependent variable. A significant interaction between H and the second contrast vector will demonstrate support for each of the predictions.

The first hypothesis predicted that those lower in self-complexity would exhibit greater rebound following suppression of negative self-relevant information only when focusing on internal distracters. The analysis involving

the number of mentions as the criterion revealed a significant main effect for the second contrast vector (which compared the internal suppressers to the external suppressers), $\beta = .72$, $t(96) = 2.32$, $p < .05$. This main effect was qualified by the predicted interaction between H and the second contrast vector, $\beta = -.76$, $t(96) = -2.44$, $p < .05$. Non-standardized b-weights using a range of $\pm 2 SD$ for self-complexity (i.e., Scott's H) were used to graph this effect.

Figure 1 (Appendix E) illustrates how the relation between self-complexity and the number of mentions of the to-be-suppressed thoughts varies as a function of whether distracters were internal or external, as predicted. Analyses of the slopes of each of the regression lines in Figure 1 were also conducted. The slope for internal suppressers was significant, $\beta = -.40$, $t(31) = -2.35$, $p < .05$, revealing that participants lower in self-complexity focusing on internal distracters showed stronger rebound than did those greater in self-complexity focusing on internal distracters, as predicted. The slope of the regression line for external suppressers was not significant, $\beta = .29$, $t(29) = 1.61$, ns . Contrary to predictions, the regression analysis involving the duration of mentions as the criterion revealed no significant effects. No other effects were significant.

The second hypothesis predicted that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity would reveal self-judgments greater in negativity. Contrary to the prediction, the interaction between H and the second contrast vector was not significant, $\beta = -.09$, $t(96) = -.27$, ns . No other effects were obtained.

The third hypothesis predicted that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity would be more likely to avoid performing a task similar to that for which negative feedback was provided. In order to determine if a composite difference score (i.e., subtracting the creative task preference rating from the analytical task preference rating) could be used as the dependent variable in the following analyses, a correlational analysis was conducted between the analytical task preference responses and the creative task preference responses. No relationship between the two was found, $r(96) = -.04$, ns. Therefore, multiple regression analyses were conducted on each of the two task preference responses separately. Contrary to the predictions, the analyses involving both the analytical task preferences and the creative task preferences revealed no interactions between H and the second contrast vector, betas = .02 and -.20, $t_s(96) = .05$ and $-.66$, ns, respectively. Interestingly, a marginal interaction between H and the first contrast vector (suppressers versus expressers) was found for the creative task preferences, beta = .55, $t(96) = 1.98$, $p < .06$. The non-standardized b-weights of this effect are plotted in Figure 2 (Appendix F). This pattern shows how the relation between self-complexity and creative task preference varies as a function of whether participants had suppressed or expressed student-related thoughts. Analyses of the slopes of each of the regression lines in Figure 2 were also conducted. The slope for suppressers was significant, beta = .30, $t(62) = 2.49$, $p < .05$, revealing that suppressers greater in self-complexity reported a

stronger preference for the creative task than did suppressers lower in self-complexity. The slope for expressers was not significant, $\beta = -.16$, $t(32) = -.89$, ns.

The final hypothesis predicted that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity would manifest a greater perseverance of negative beliefs even after being told that the negative self-information was not accurate. Contrary to the prediction, no interaction between H and the second contrast vector was found, $\beta = -.27$, $t(96) = -.85$, ns. No other effects were significant.

Ancillary Tests

As discussed previously, it is argued that the process of thought suppression increases the accessibility of the to-be-suppressed thought (Macrae et al., 1994). Based on this research, it was first expected that participants who previously suppressed thoughts of failure on the task and of their student self-aspect would reveal greater accessibility of student-related thoughts than would participants who did not previously suppress such thoughts. In addition, based on the hypotheses in the current work, it was also expected that this relationship would be moderated by self-complexity and the type of distracter used during suppression. More specifically, it was expected that following suppression of negative self-relevant information while focusing on internal distracters, those lower in self-complexity would demonstrate greater accessibility of student-related thoughts. A multiple regression analysis was conducted with H, two contrast vectors (suppressers versus expressers and

internal versus external suppressers) and their interactions with H regressed on the accessibility scores. As predicted, a marginal main effect for the first vector (suppressers versus expressers) was found, beta = .51, $t(96) = 1.77$, $p < .08$, revealing that suppressers had greater accessibility for student-related concepts than did expressers. Interestingly, this main effect was qualified by a very marginal interaction between H and the first contrast vector, beta = -.44, $t(96) = -1.52$, $p < .14$. Non-standardized b-weights are displayed in Figure 3 (Appendix G) to illustrate how the relation between self-complexity and the number of student-related words completed tends to vary as a function of whether participants had suppressed or expressed student-related thoughts. Analyses of the slopes for each of the regression lines in Figure 3 were also conducted. The slope for suppressers was significant, beta = -.36, $t(62) = -3.01$, $p < .01$, revealing that suppressers lower in self-complexity revealed greater accessibility of student-related concepts than did suppressers greater in self-complexity. The slope for expressers was not significant, beta = -.05, $t(32) = -.26$, ns. Contrary to expectations, distracter type did not influence accessibility of student-related concepts.

Because previous investigations (Campbell et al., 1991; Niedenthal et al., 1992; Woolfolk et al., 1995) examining the relationship between self-complexity and self-esteem have revealed contradictory findings, this relationship was also examined in the current research. A correlational analysis revealed a negative correlation between H and the initial self-esteem measure (Time 1), $r(96) = -.23$,

$p < .05$. Similar to Woolfolk et al. (1995), this finding suggests that greater self-complexity is related to lower self-esteem.

As previously mentioned, in an investigation of the affective-extremity hypothesis Linville (1985) found that those lower in self-complexity reported greater change in mood and self-evaluation following both positive and negative feedback than did those greater in self-complexity. In order to test for replication, a correlational analysis was conducted with H and self-esteem change scores (i.e., subtracting self-esteem at time 2 from self-esteem at time 1). A negative correlation between H and self-esteem change scores was found, $r(96) = -.24$, $p < .05$, revealing that those lower in self-complexity reported a greater drop in self-esteem following the negative feedback than did those greater in self-complexity. This finding is supportive of the affective-extremity hypothesis. Correlational analyses were also conducted with H and both the positive and negative mood change scores (i.e., subtracting mood at time 2 from mood at time 1) separately. A marginal negative correlation between H and positive mood change scores was found, $r(96) = -.18$, $p < .07$. This finding suggests that those lower in self-complexity tended to report a greater drop in their positive mood following the negative feedback than did those greater in self-complexity, which is also consistent with the affective-extremity hypothesis. No correlation between H and negative mood change scores was found, $r(96) = -.02$, ns.

Finally, the conceptual process of thought suppression and subsequent rebound suggests that there should be an inverse relationship between initial

suppression and subsequent expression within individuals, such that the less an individual mentions the unwanted thought during suppression the more that individual should mention it during subsequent expression. Correlational analyses were conducted on both the number of mentions and the duration of mentions between the initial suppression and subsequent expression periods for each of the suppression groups separately. Contrary to the conceptual definition, a marginal positive correlation between the duration of mentions in the suppression period and the duration of mentions in the expression period for those suppressing student-related thoughts while focusing on an external distracter (i.e., the white bear) was found, $r(29) = .32$, $p < .08$. This finding suggests that the longer one tends to talk about the to-be-suppressed thoughts during suppression, the longer that individual talks about the previous to-be-suppressed thoughts during subsequent expression. Interestingly, this finding is not in accordance with the conceptual definition of thought suppression and subsequent rebound. No correlation between the number of mentions in the suppression and expression periods for those focusing on a white bear was found, $r(29) = .14$, ns. In addition, no correlations between the number of mentions or the duration of mentions between the suppression and expression periods were found for those suppressing student-related thoughts while focusing on internal distracters, $r_s(31) = .16$ and $.03$, ns, respectively.

Exploratory Analyses

Because the exploratory hypotheses involving compartmentalization focused on how compartmentalization, positive importance, and the type of distracter

used during suppression (internal versus external) might interact to produce differences in the various dependent variables, the following results are based on multiple regressions involving the 3-way interaction among phi, positive importance, and a contrast vector (comparing internal suppressers to external suppressers). In addition, the following lower-order factors were included in the regression analyses: phi, positive importance, the contrast vector (internal versus external), and the 2-way interaction between phi and positive importance. Thus, the analyses excluded participants in the expression group. And because theory related to compartmentalization is based on the significance of the interaction between phi and positive importance, which treats each of their linear contributions as relatively uninteresting individual differences, the other 2-way interactions were not included in the analyses. Significant 3-way interactions among phi, positive importance, and the contrast vector comparing internal suppressers to external suppressers for each of the dependent variables will demonstrate support for the predictions.

The first exploratory hypothesis was that negative compartmentalization would be related to greater rebound following suppression of negative self-relevant information while focusing on internal distracters. Contrary to expectations, the 3-way interaction was not significant for either the number of mentions, beta = -.34, $t(87) = -1.08$, ns, or for the duration of mentions, beta = -.20, $t(87) = -.64$, ns. No other effects were significant.

The second exploratory hypothesis predicted that following suppression while focusing on internal distracters, negative-compartmentalized individuals

would reveal self-judgments greater in negativity. Contrary to the expectation, the 3-way interaction was not significant, $\beta = -.18$, $t(87) = -.58$, *ns*. However, a marginal main effect for ϕ was found, $\beta = .75$, $t(87) = 1.72$, $p < .09$, suggesting that compartmentalized participants tended to report greater expectations regarding how well they would perform on a task similar to that for which negative feedback was provided. This main effect was qualified by a marginally significant 2-way interaction between ϕ and positive importance, $\beta = -.78$, $t(87) = -1.79$, $p < .08$. Figure 4 (Appendix H) shows how the relation between self-concept organization and self-judgment scores varies as a function of whether participants had a fewer number of self-aspects that were positive and important or a greater number of self-aspects that were positive and important. Each of the slopes was non-significant.

The third exploratory hypothesis predicted that following suppression while focusing on internal distracters, negative-compartmentalized individuals would be more likely to avoid performing a task similar to that for which negative feedback was provided. Contrary to expectations, the 3-way interaction was not significant for either the analytical task preference responses, $\beta = -.08$, $t(87) = -.27$, *ns*, or for the creative task preference responses, $\beta = -.41$, $t(87) = -1.34$, *ns*. However, the main effect for ϕ was significant, $\beta = .89$, $t(87) = -2.01$, $p < .05$, suggesting that compartmentalized participants reported a stronger preference for the creative task following suppression than did evaluatively-integrated participants. This main effect was qualified by a significant interaction between ϕ and positive importance, $\beta = -.85$,

$t(87) = -2.01, p < .05$. Figure 5 (Appendix I) shows how the relation between self-concept organization and creative task preference varies as a function of whether participants had a fewer number of self-aspects that were positive and important or a greater number of self-aspects that were positive and important. Each of the slopes was non-significant.

The final exploratory hypothesis predicted that following suppression while focusing on internal distracters, negative-compartmentalized individuals would manifest a greater perseverance of negative beliefs even after being told that the negative self-information was not accurate. Contrary to the expectation, the 3-way interaction was not significant, $\beta = -.16, t(87) = -.50, ns$. No other effects were obtained.

DISCUSSION

The main purpose of the current study was to investigate the role that self-concept organization plays when one is attempting to distract oneself from unwanted self-relevant thoughts. Although previous research has shown that self-concept organization may be related to self-relevant affect, its implications for thought suppression have not been explored. Thus, the current research attempted to shed some light on this relationship. Furthermore, this investigation attempted to understand why some prior investigations examining the suppression of self-relevant thoughts have not found the rebound effect that has been demonstrated in research examining the suppression of novel stimuli and of stereotypical thoughts. Kelly and Kahn (1994) suggested that the reason for not obtaining rebound effects for self-relevant thoughts might be because

individuals have more experience suppressing self-relevant thoughts than they do suppressing non-self-relevant thoughts. Therefore, they may have developed a network of successful distracters to be used during suppression. The current research examined the role of the self-concept as one potential network of distracters. The primary hypotheses focused on self-complexity, one way in which self-concept organization varies among individuals.

The first hypothesis predicted that following suppression of negative self-relevant thoughts while focusing on internal distracters, those lower in self-complexity would reveal stronger rebound effects. The analysis involving the number of mentions supported this prediction. Participants lower in self-complexity focusing on internal distracters revealed a greater number of mentions of the to-be-suppressed thoughts following suppression. This outcome could result for at least two reasons. First, because those lower in self-complexity have fewer self-aspects overall, they have fewer internal distracters available during suppression than do those greater in self-complexity. Second, because their self-aspects are more interconnected in memory, there are more associative links back to the to-be-avoided self-aspect. Thus, those lower in self-complexity should have more difficulty suppressing negative self-relevant information while focusing on themselves. This difficulty in avoiding unwanted thoughts could lead to greater attempts to avoid self-focused attention altogether, which may lead to more destructive and self-defeating behaviors, such as alcoholism (Baumeister, 1991). On the other hand, because those greater in self-complexity have a greater number of

independent self-aspects, they should have less difficulty suppressing negative self-relevant information while focusing on themselves and, therefore, may be less likely to deal with self-focused attention in destructive ways. Although it will take additional work to explore the possibility that those lower in self-complexity will engage in more destructive behavior, this line of thinking is consonant with the research findings of Dixon and Baumeister (1991). These researchers found that people lower in self-complexity attempted to escape from self-awareness more quickly than those greater in self-complexity following negative self-relevant feedback.

Contrary to expectations, the analysis involving the duration of mentions did not reveal evidence consistent with the hypothesis. This may be because the duration of mentions is a less reliable measure of rebound than the number of mentions. Although one investigation (i.e., Wegner & Gold, 1995) using duration of mentions was partly successful in demonstrating the rebound effect, all other investigations have only reported evidence using the number of mentions as the measure of rebound.

The second hypothesis predicted that following suppression of negative self-relevant thoughts while focusing on internal distracters, those lower in self-complexity would exhibit self-judgments greater in negativity. Contrary to the prediction, this hypothesis did not receive support. It was suggested that those lower in self-complexity would encounter the to-be-avoided self-aspect more often, resulting in greater accessibility of negative self-relevant information for them. It may be that most students had relatively positive beliefs about

themselves as students, and thus, recurrent thinking about their student self-aspect was not completely negative. In fact, the findings for accessibility in the current study do show that those lower in self-complexity did reveal greater accessibility of student-related concepts. However, the student self-aspect probably contained a sizable amount of positive information in addition to the negative feedback information provided to them during the experiment. This preexisting positive information in combination with the negative feedback information probably resulted in an accessible student self-aspect that was not overly negative. Therefore, the greater accessibility of the student self-aspect would not increase negative self-judgments for those lower in self-complexity.

The third hypothesis predicted that following suppression of negative self-relevant thoughts while focusing on internal distracters, those lower in self-complexity would report a stronger resistance to participating in a task similar to that which previously provided negative feedback. Analyses were conducted on two task preferences: analytical and creative. Contrary to the predictions, neither analysis revealed evidence consistent with the hypothesis. Similar to the second hypothesis, this prediction rested on the expectation that those lower in self-complexity would experience greater accessibility of negative self-relevant information. As discussed above, the increased accessibility of the student self-aspect as a whole may not have been experienced as negative as was initially expected. If the student self-aspect contained a sizable amount of positive information, raising its accessibility would not likely lead participants lower in self-complexity to have a greater need to avoid tasks similar to that

which resulted in negative feedback. In fact, raising its accessibility may have actually helped to alleviate the effects of the negative feedback.

Interestingly, a marginal interaction between self-complexity and suppressers versus expressers was found for creative task preference. Suppressers greater in self-complexity reported a stronger preference for the creative task. As mentioned previously, it is possible that the self-aspects of individuals greater in self-complexity reflect more distinct and varied interests. Following suppression, the accessibility of student-related thoughts may have led those greater in self-complexity to desire a different type of task from that which was previously given. Thus, they were more likely to prefer the creative task. Those lower in self-complexity, on the other hand, may have been more comfortable performing a task similar to that which they completed previously.

The final hypothesis predicted that those lower in self-complexity would demonstrate a greater perseverance of negative beliefs following suppression while focusing on internal distracters. Contrary to the prediction, the analysis did not reveal any evidence consistent with the hypothesis. Again, this may be because the increased accessibility of the student self-aspect as a whole may not have been experienced as negative as was initially expected.

In addition to the primary hypotheses discussed above, a number of ancillary hypotheses were tested. The first of these was conducted to assess the accessibility of student-related thoughts following the suppression. Previous research by Macrae et al. (1996) found that participants who previously suppressed stereotypical thoughts revealed greater accessibility of such

thoughts than did participants who previously expressed such thoughts. Therefore, it was first expected that suppressers would reveal greater accessibility of student-related thoughts than would expressers. It was also expected, based on the current research, that this relationship would be qualified by self-complexity and distracter type. As expected, participants who previously suppressed thoughts about the feedback and about their student self-aspect revealed greater accessibility of student-related thoughts than did participants who were not told to suppress such thoughts. There was also marginal evidence that this relationship varied as a function of self-complexity, but not as a function of distracter type. In particular, suppressers lower in self-complexity tended to reveal greater accessibility of student-related thoughts than did suppressers greater in self-complexity. This finding provides some support for the proposition that those lower in self-complexity may be more likely to inadvertently raise the accessibility of the to-be-avoided self-aspect during suppression. Interestingly, this finding along with the finding of the first hypothesis for self-complexity provides some support for the Wegner's (1994) model of mental control and also the extension of this model posited by Macrae et al. (1994). In particular, the first hypothesis for self-complexity showed that the use of different types of distracters by the controlled operating process during suppression leads to differences in the relative amount of rebound between the two suppression groups. This finding is in accordance with Wegner's view that failures of the operating process (due to less suitable distracters) produce greater accessibility of unwanted thoughts, which

subsequently leads to greater rebound. But the finding that suppressors lower in self-complexity tended to reveal greater accessibility of student-related thoughts, along with the fact that this relationship did not vary as a function of distracter type, provides some support for Macrae et al.'s extension of Wegner's model. This extension proposed that the process of thought suppression itself increases the accessibility of the unwanted thought, even if the operating process is successful in its job. The current findings are in accordance with this proposition.

The second ancillary test was conducted to examine the potential relationship between self-complexity and self-esteem. Prior research exploring this relationship has produced mixed results. In particular, Campbell et al. (1991) found a positive relationship between them, Woolfolk et al. (1995) found a negative relationship between them, and Niedenthal et al. (1992) found no relationship between them. The current investigation revealed a negative relationship between the two, showing that greater self-complexity was related to lower self-esteem. This finding is in accordance with that of Woolfolk et al. (1995). Together, these mixed findings suggest that there may be a moderator variable in the relationship between self-complexity and self-esteem that has not yet been identified. One possibility may be the types of self-aspects that make up one's self-concept. In particular, it is widely accepted that human beings have an almost innate need to develop and maintain social relationships. Research (Gottlieb & Green, 1984; Lu & Chen, 1996; Shaver, Furman, & Buhrmester, 1985) has shown that those who develop strong social

networks tend to cope better with life's challenges than those who do not develop social networks. It is possible that those with a self-concept made up of self-aspects that reflect social relationships have higher self-esteem than those with a self-concept made up of self-aspects that reflect nonsocial interests. That is, self-aspects may vary qualitatively in ways that facilitate their ability to ameliorate stress during difficult times.

Another possible moderator may be the breadth of the self-aspects that make up one's self-concept. More specifically, it may be that those who have fewer, yet broader, self-aspects cope better than those who have many, yet narrower, self-aspects. For instance, an individual who has a student self-aspect that contains information about her general role as a student may be more stable and self-assured than an individual who describes each of the components of his student role (e.g., "when I am taking tests," "when I get an A," "when I get a C," "when I am studying,") separately. It would seem that the latter individual would experience much more variance in his reactions to events within his student role than would the former individual.

The third ancillary test examined the affective-extremity hypothesis associated with self-complexity theory. This hypothesis suggests that lower self-complexity is related to more extreme affective responses to self-relevant feedback, whereas greater self-complexity is related to more moderate affective responses given similar feedback. The methods used in the current study allowed for a replication of Linville's (1985) finding that following negative feedback those lower in self-complexity revealed more negative self-evaluation

and mood than did those greater in self-complexity. The current research found a relationship between self-complexity and self-esteem change, suggesting that those lower in self-complexity reported a greater drop in self-esteem following the negative feedback than did those greater in self-complexity. This finding replicates that of Linville (1985) for those given negative feedback and is in accordance with the affective-extremity hypothesis. A marginal relationship between self-complexity and positive mood change was also found, suggesting that after receiving negative feedback, those lower in self-complexity reported a larger drop in positive mood than did those greater in self-complexity. Again, this is consistent with Linville's (1985) affective-extremity hypothesis. No relationship between self-complexity and negative mood change was found. It is possible that positive moods may be more variable in response to life events than negative moods. Furthermore, because there was no relationship found between the positive mood and negative mood scores in the current research, it could be argued that positive feelings and negative feelings fall along separate dimensions. This reasoning is consistent with research (e.g., Diener & Emmons, 1984; Watson & Tellegen, 1985) suggesting that positive and negative affect are relatively independent dimensions. Similar to circumplex models of affect, independent dimensions of affect could explain greater variability across moods. For example, a truly negative mood could consist of high ratings on negative mood adjectives and low ratings on positive mood adjectives, whereas a truly positive mood would consist of the opposite ratings.

A modest negative mood could consist of moderate ratings on negative mood adjectives and low ratings on positive mood adjectives, and so forth.

The final ancillary test involved an examination of the conceptual process of thought suppression and subsequent rebound. This process suggests that the more an individual tries to suppress a thought, the more that same individual subsequently ends up thinking about it when suppression is no longer a goal. Inverse relationships between the initial suppression and subsequent expression periods for both the number of mentions and the duration of mentions would be in accordance with this process. Contrary to expectations, a marginal positive relationship between the duration of mentions in the suppression period and the duration of mentions in the expression period was found for those suppressers focusing on a white bear. This suggests that the longer an individual talks about the to-be-suppressed thoughts in the suppression period, the longer that individual tends to talk about the previous to-be-suppressed thoughts in the subsequent expression period. This finding is not in accordance with the conceptual process suggested by Wegner et al. (1987). In addition, no relationship for the number of mentions between the two periods was found for suppressers focusing on a white bear. Furthermore, no relationships between the two periods were found for either the number of mentions or the duration of mentions for those suppressers focusing on other self-aspects. Wegner's (1994) model of mental control suggests that each time the operating process fails to find a suitable distracter, the unwanted thought becomes accessible, leading to an overt mention of the thought. The current

lack of relationship between overt mentions in the suppression period and overt mentions in the expression period suggests that the conceptual process of thought suppression cannot be explained entirely by failures of the controlled process. As mentioned previously, Macrae et al. (1994) suggest that the monitoring process by itself may be sufficient to produce the basic rebound effect. With this in mind, the monitoring process may be better able to account for the conceptual process involved in thought suppression and subsequent rebound than can the operating process. It should be noted that because participants were provided with distracters on which to focus during suppression, the current study might not be a reliable examination of this relationship. As previously mentioned, Wegner, et al. (1987) found that the rebound effect was attenuated when participants were provided with a specific distracter on which to focus during suppression. The same attenuation of rebound may have occurred in the current study. Thus, further research is needed to address this issue.

In addition to the above analyses, compartmentalization was also examined in a series of tests that paralleled the primary hypotheses.

Compartmentalization refers to another way in which self-concept organization can vary among individuals; and accordingly, its role in thought suppression was examined. Contrary to the predictions, the analyses did not reveal evidence consistent with any of the hypotheses.

However, there were two findings involving compartmentalization that are of interest. First, contrary to what would be expected based on previous research

involving compartmentalization, compartmentalized participants with a fewer number of positive and important self-aspects (i.e., negatively-compartmentalized participants) tended to report greater expectations regarding how well they would perform on a task similar to that for which negative feedback was provided. One possible explanation of this finding is that negatively-compartmentalized individuals may tend to have greater expectations of their future performance than is justified based on their past performance. Such expectations may lead to greater disappointment following future failures, which would add to the negative self-evaluation that is characteristic of negatively-compartmentalized individuals.

Second, consistent with what would be expected based on theory involving compartmentalization, negatively-compartmentalized participants reported a stronger preference for the creative task following negative feedback. This finding along with the finding above suggests that negatively-compartmentalized individuals may believe that they will perform a previously failed task better in the future, but when given the opportunity they prefer experiences that will not provide such objective feedback.

For the present, it can be assumed that compartmentalization does not play an important role in the process of thought suppression and subsequent rebound. Unlike self-complexity, compartmentalization does not take the relationship among self-aspects into account, which may be one limitation of its role in thought suppression.

In conclusion, it seems that self-concept organization can play an important role in the process of thought suppression. In particular, the self-concept may serve as an aid in distracting oneself from unwanted thoughts. In terms of self-complexity, the self-concept allows those with a greater number of independent self-aspects to avoid a currently unpleasant self-aspect without avoiding self-focused attention altogether. However, those with fewer and more interrelated self-aspects do not have the luxury of focusing on other self-aspects as a way of successfully avoiding an unpleasant self-aspect. The relatively greater number of interconnections among fewer self-aspects has the undesirable consequence of raising the accessibility of the to-be-avoided self-aspect, leading them to think about the unpleasant self-aspect more often following attempts at suppression. Accordingly, those lower in self-complexity should be more likely to attempt to reduce self-focused attention (Dixon & Baumeister, 1991), which may lead them to engage in more self-destructive behaviors, such as substance abuse.

The role of distracters in the process of thought suppression and subsequent rebound has received surprisingly little attention. However, the current study shows that the type of distracter used during suppression plays a very important role in the relative success of thought suppression. In particular, this research demonstrated that different types of distracters can impact the success of thought suppression, and the organization of the self-concept itself may influence the relative efficacy of a distracter that is associated with the self.

Although previous research has found a relationship between self-concept organization and affective reactions to life events, the process underlying such a relationship is not well understood. The current research illustrates one way in which self-concept organization can influence the experience of affect by revealing its impact on suppressing unwanted self-relevant thoughts.

Future research should focus on the role of other distracters involved in successful versus unsuccessful thought suppression. Attention should also focus on trying to discover the precise process underlying thought suppression and subsequent rebound, and it should further develop a model of thought suppression that integrates both past and present findings. In terms of self-complexity, future research should continue to focus on trying to discover a potential moderator variable involved in the relationship between self-complexity and self-esteem.

On the practical side, the current research suggests that developing distinct and varied interests may be a healthy way to avoid unpleasant self-relevant thoughts. Although dividing your eggs among various cognitive baskets may prove challenging, keeping them numerous and separate can be beneficial when one is left with egg on one's face.

APPENDICES

APPENDIX A

APPENDIX A

Calculation of H using the Self-Aspects of a Participant in the Current Study

<u>"At School"</u>	<u>"With Friends"</u>	<u>"With Girlfriend"</u>	<u>"With Family"</u>	<u>"With Strangers"</u>
Lazy	Communicative	Comfortable	Tense	Insecure
Successful	Giving	Self-centered	Disagreeing	Communicative
Independent	Friendly	Inferior	Insecure	Independent
Organized	Self-centered	Communicative	Independent	Tense
	Happy	Energetic	Isolated	
		Happy	Hardworking	
		Giving	Incompetent	
		Insecure		
		Optimistic		
		Hardworking		

Combination #1 (traits in Group 1 only): Lazy, Successful, Organized ($n_1 = 3$)

Combination #2 (traits in Group 2 only): Friendly ($n_2 = 1$)

Combination #3 (traits in Group 3 only): Comfortable, Inferior, Energetic, Optimistic ($n_3 = 4$)

Combination #4 (traits in Group 4 only): Disagreeing, Isolated, Incompetent ($n_4 = 3$)

Combination #5 (traits in Groups 1 and 4): Independent ($n_5 = 1$)

Combination #6 (traits in Groups 2 and 3): Giving, Happy, Self-centered ($n_6 = 3$)

Combination #7 (traits in Groups 3 and 4): Insecure, Hardworking ($n_7 = 2$)

Combination #8 (traits in Groups 4 and 5): Tense ($n_8 = 1$)

Combination #9 (traits in Groups 2 and 3): Communicative ($n_9 = 1$)

Remaining Group (traits in no group): Capable, Confident, Disorganized, Fun and Entertaining, Hopeless, Immature, Indecisive, Intelligent, Interested, Irresponsible, Irritable, Like a failure, Lovable, Mature, Needed, Outgoing, Sad and Blue, Uncomfortable, Unloved, Weary, Worthless ($n_{10} = 21$)

$$H = \log_2 40 - 1/40 (3\log_2 3 + 1\log_2 1 + 4\log_2 4 + 3\log_2 3 + 1\log_2 1 + 3\log_2 3 + 2\log_2 2 + 1\log_2 1 + 1\log_2 1 + 10\log_2 10)$$

$$H = 5.34 - 1/40 (4.77 + 0 + 8.00 + 4.77 + 0 + 4.77 + 2.00 + 0 + 0 + 92.55)$$

$$H = 5.34 - 2.92$$

$$H = 2.42$$

APPENDIX B

APPENDIX B

Stream of Consciousness Instructions

During the next several periods, you will simply be asked to verbally report your stream of consciousness. That is, to indicate what is going through your mind. Measures have been taken to ensure your privacy and to guarantee confidentiality concerning your participation (no identifying information will be associated with the audio tapes and none of the tapes will be used until after the semester is over). When asked to report on your thoughts, please convey whatever information you can on your ongoing thoughts at that moment. Your report might include, but is not limited to, images, ideas, memories, feelings, fantasies, plans, sensations, observations, daydreams, objects that catch your attention, and efforts to solve a problem. There are no restrictions, qualifications, conventions, or expectations; simply report on whatever is going through your mind (whatever you are conscious of or aware of). It is important that you continuously verbalize your thoughts during the whole 5-minute period...try not to pause for long periods of time.

Period 1 (All Participants):

For the first 5-minute period, simply report on everything that comes to mind, even if what comes to mind involves the feedback you were given on the analogy task and how it may be related to your academic life.

Period 2 (Manipulation):

Internal Suppressers:

Another experiment not related to this study had the computer output the groups that you described in the first session of the experiment and put them in this envelope.

For the second 5-minute period, please verbalize your thoughts as you did before, with one exception. This time, try not to think about the feedback you were given on the analogy task or your academic life, but mention it if you do. Instead, try to think about one or more of the other groups that you described in the first session listed in this envelope. Go ahead and look over those for a few minutes. (In order to guarantee confidentiality, participants were given a new envelope in which to put the list of their groups and were asked to sealed it.) Again, remember, don't think about the feedback or your academic life, but mention it if you do.

External Suppressers:

For the second 5-minute period, please verbalize your thoughts as you did before, with one exception. This time, try not to think about the feedback you were given on the analogy task or your academic life, but mention it if you do. Instead, try to think about a white bear. Again, remember, don't think about the feedback or your academic life, but mention it if you do.

Expressers:

For the second 5-minute period, again simply report everything that comes to mind, even if what comes to mind involves the feedback you were given on the analogy task and anything else related to your academic life.

Period 3 (All Participants):

For the last 5-minute period, simply report everything that comes to mind, even if what comes to mind involves the feedback you were given on the analogy task and how it may be related to your academic life.

APPENDIX C

APPENDIX C

Word Completion Items

<u>r</u> ight	<u>d</u> ull
s <u>k</u> ill	<u>c</u> lass
<u>t</u> est	d <u>e</u> sk
s <u>m</u> art	wit <u>t</u>
fool <u>i</u>	ba <u>d</u>
gr <u>a</u> de	<u>p</u> en
sh <u>a</u> me	<u>f</u> ine
<u>b</u> rain	sl <u>o</u> w
d <u>u</u> nce	bo <u>o</u> k
re <u>p</u> ort	<u>f</u> ail
<u>l</u> earn	<u>t</u> each
sh <u>a</u> rp	<u>p</u> oor
gu <u>e</u> ss	<u>k</u> een
kn <u>o</u> w	

APPENDIX D

APPENDIX D

Table 1. Descriptive Statistics for Primary Variables across All Participants

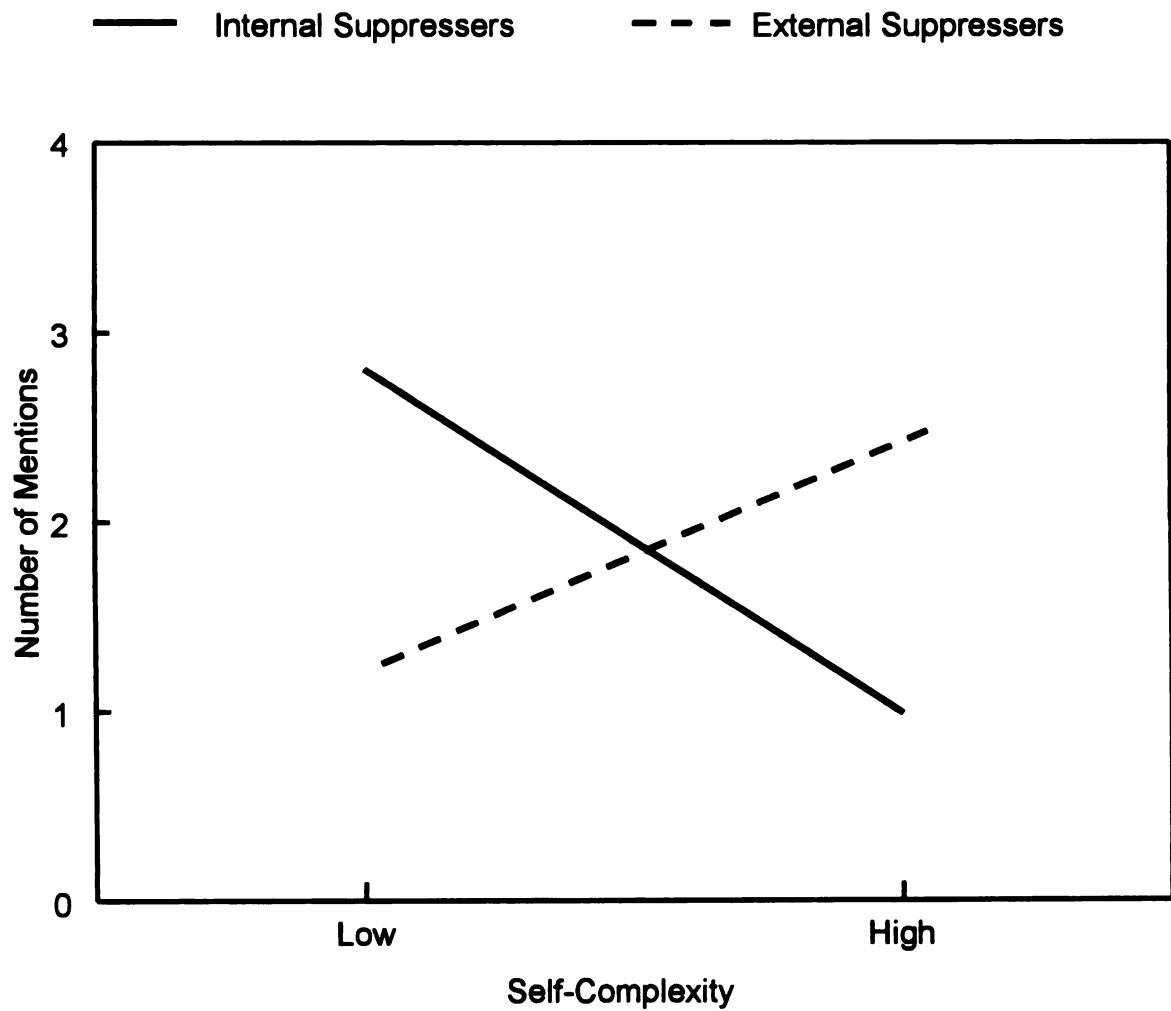
Variable	<u>M</u>	<u>SD</u>
Scott's <u>H</u>	2.49	.92
Total Number of Self-Aspects	4.58	2.37
Compartmentalization	.67	.29
Positive Importance	30.68	7.76
Self-Esteem (Time 1)	31.35	4.91
Positive Mood (Time 1)	29.46	7.16
Negative Mood (Time 1)	17.67	5.71
Self-Esteem (Time 2)	30.69	5.09
Positive Mood (Time 2)	26.97	8.14
Negative Mood (Time 2)	17.31	6.20
Number of Mentions (Period 1)	2.73	1.29
Number of Mentions (Period 2)	1.15	1.11
Number of Mentions (Period 3)	1.70	1.22
Duration of Mentions (Period 1)	84.25	67.62
Duration of Mentions (Period 2)	43.40	63.71
Duration of Mentions (Period 3)	74.75	85.93
Self-Judgment	3.20	1.41
Analytical Task Preference	2.72	1.58
Creative Task Preference	5.44	1.26
Belief Perseverance	11.65	4.95
Implicit Accessibility	9.91	2.17

Note. All of the statistics, excluding compartmentalization, are based on a sample size of 98. Compartmentalization scores can only be calculated for participants who have at least two negative and two positive traits across their self-aspects. In this study, nine participants had less than two negative traits across their self-aspects. Therefore, they are not included in the compartmentalization measure.

APPENDIX E

APPENDIX E

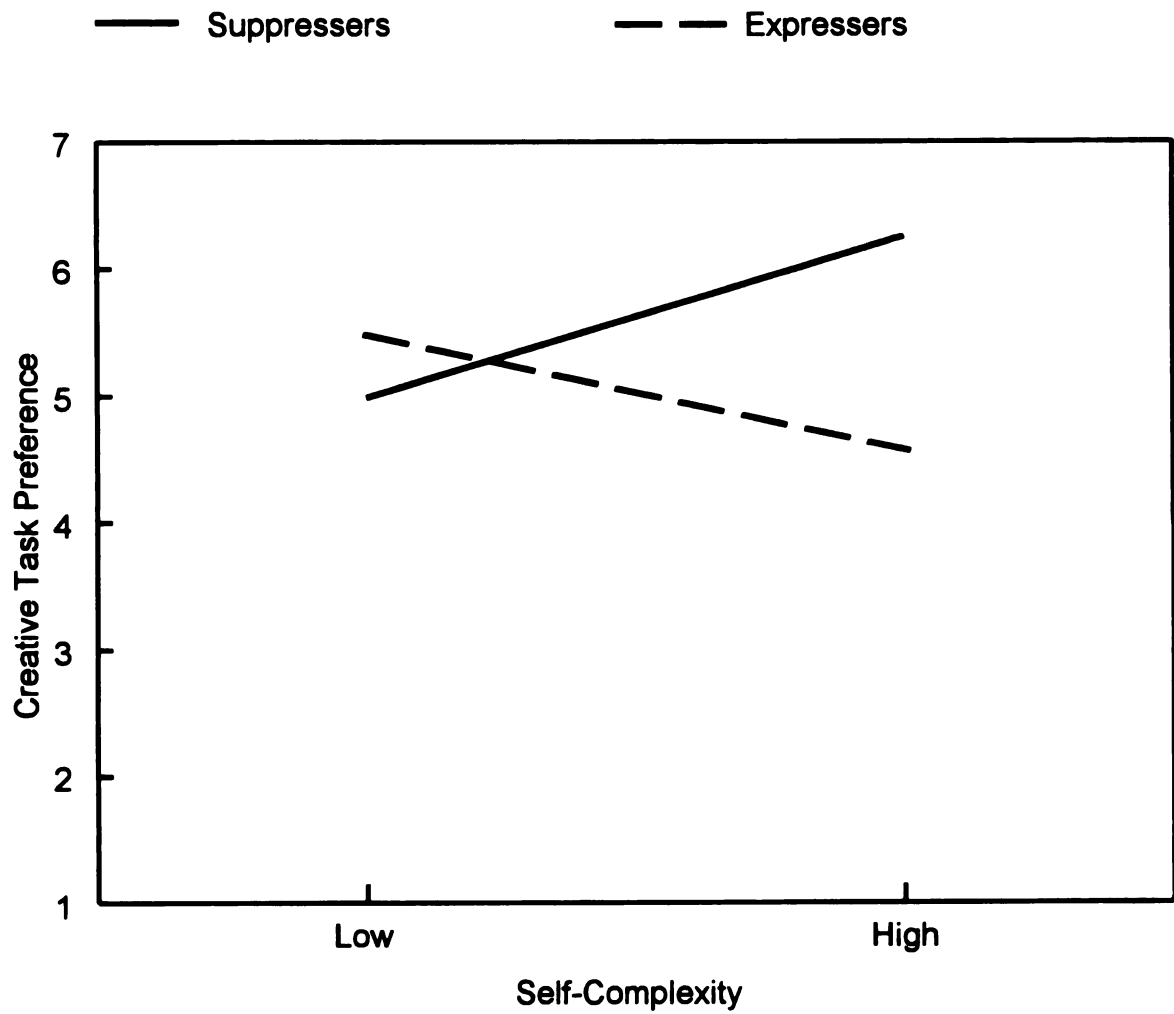
Figure 1. Interaction Between Self-Complexity and Distracter Type for Number of Mentions



APPENDIX F

APPENDIX F

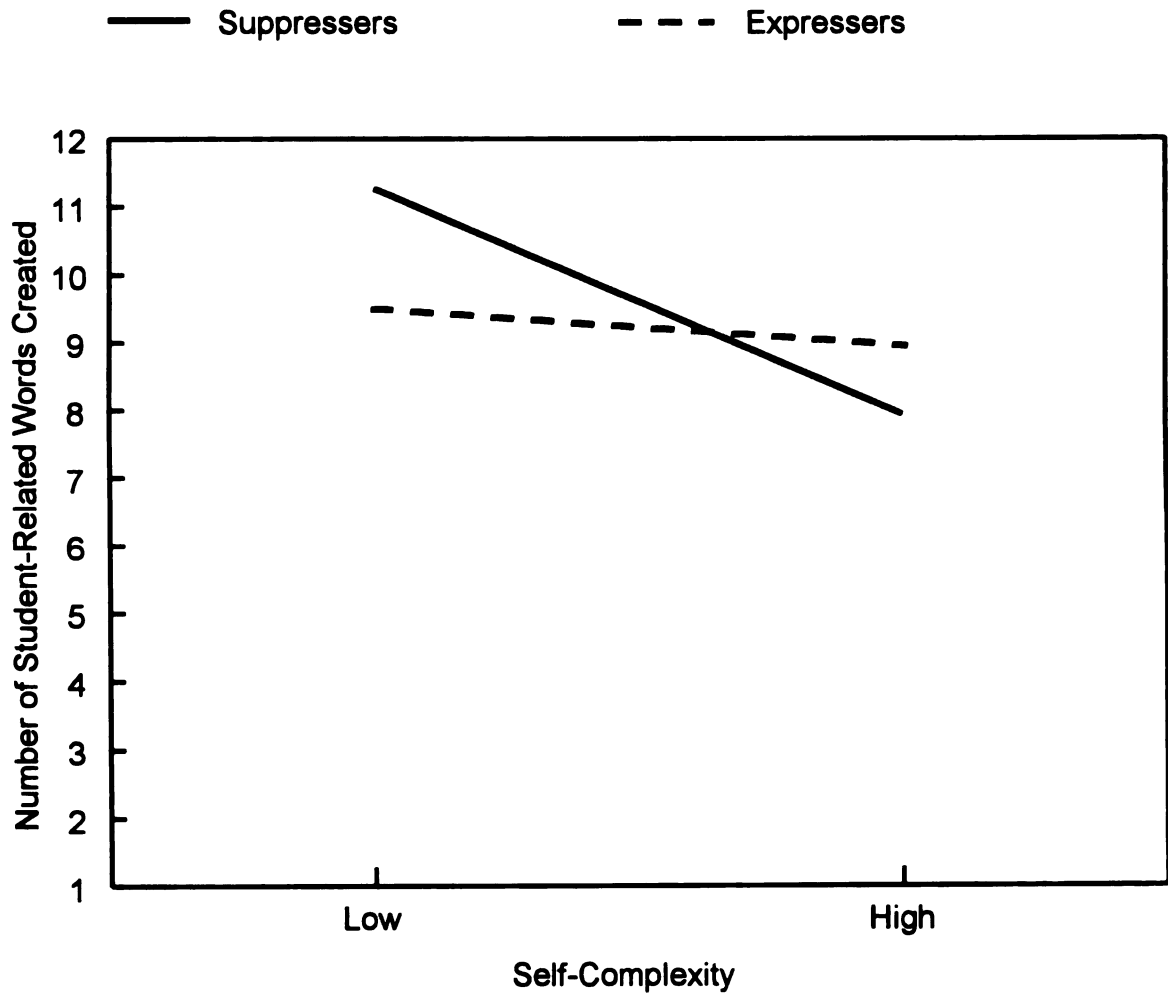
Figure 2. Marginal Interaction Between Self-Complexity and Suppressers Versus Expressers for Creative Task Preference



APPENDIX G

APPENDIX G

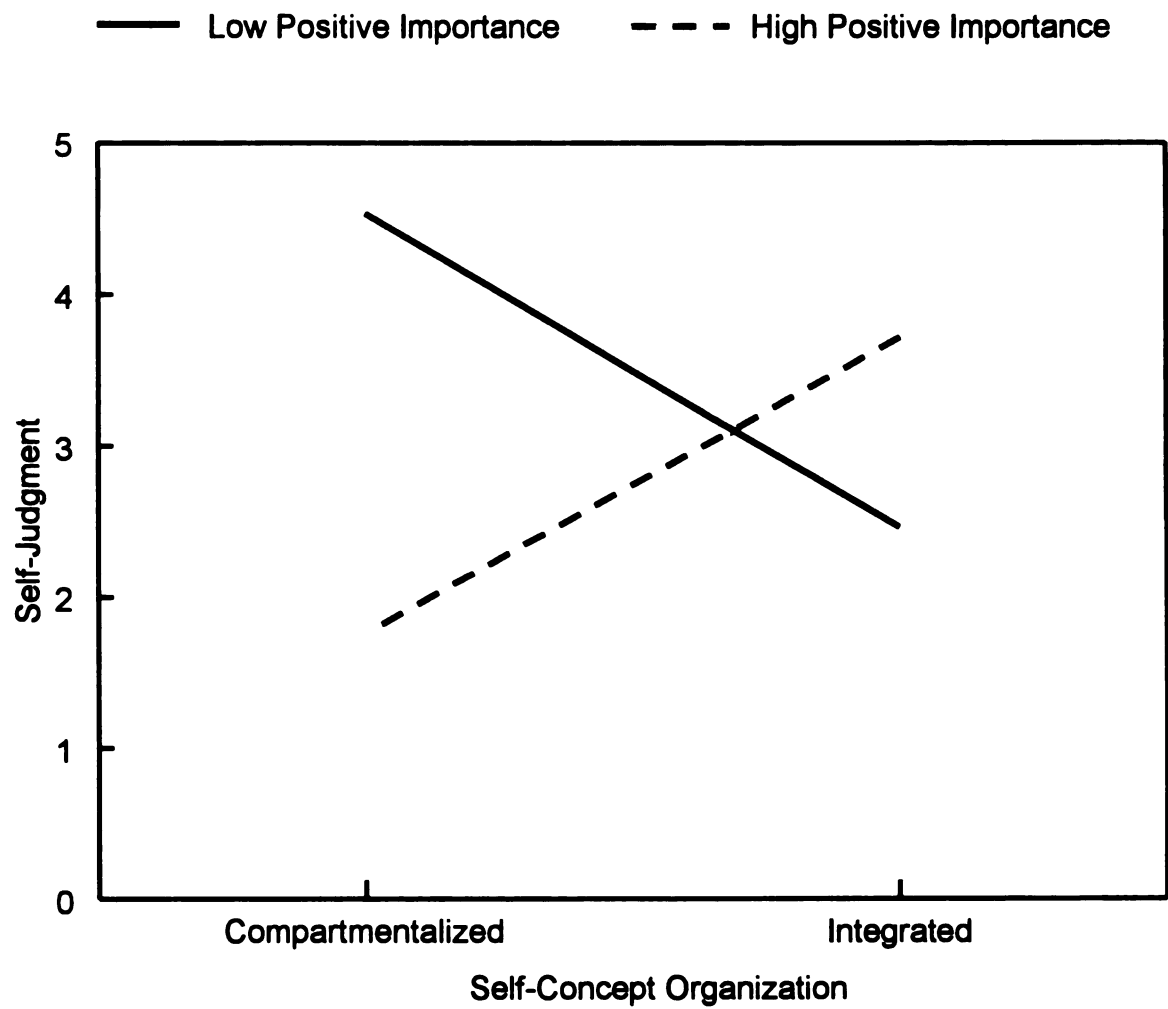
Figure 3. Marginal Interaction Between Self-Complexity and Suppressers Versus Expressers for Number of Student-Related Words Created



APPENDIX H

APPENDIX H

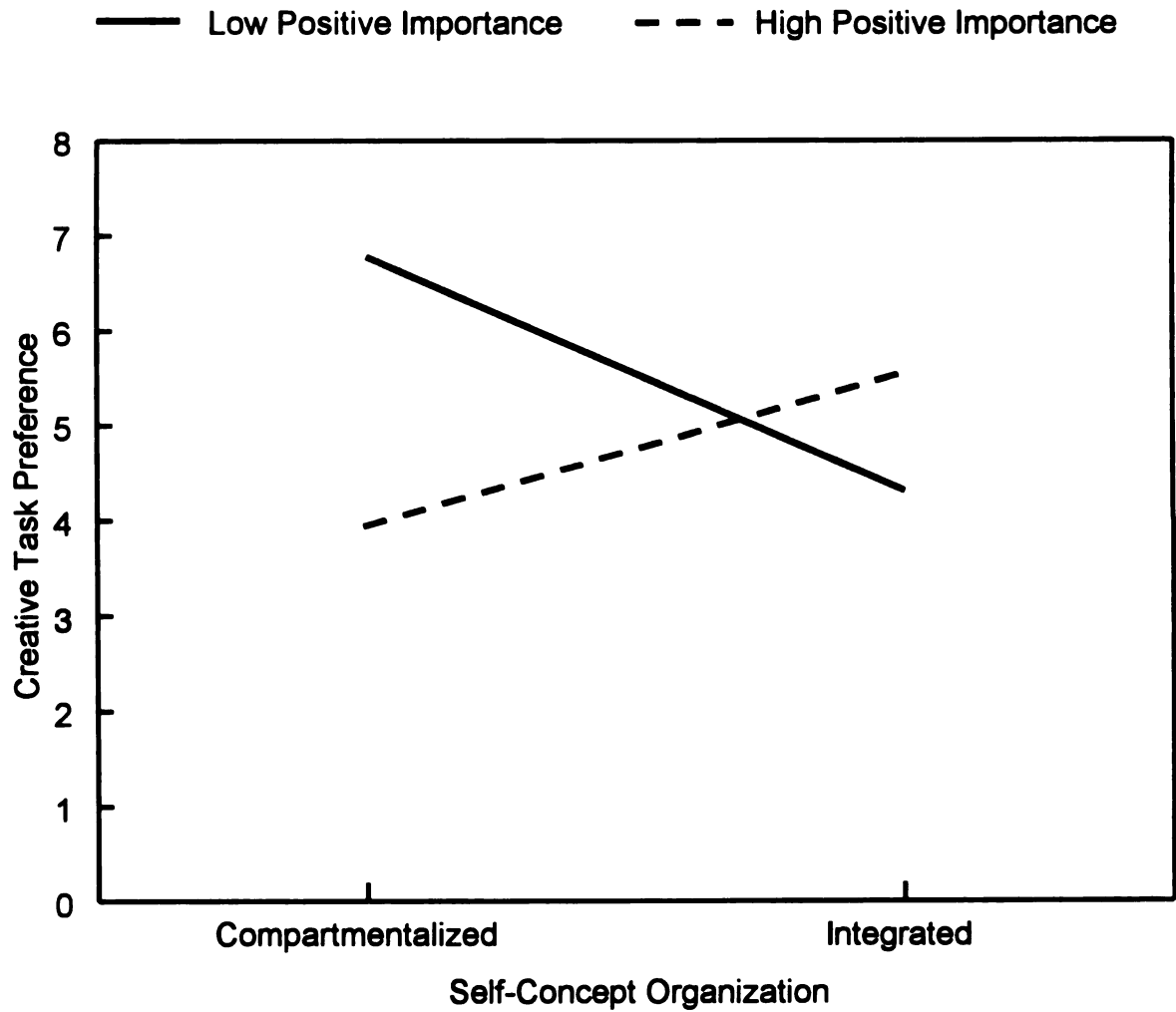
Figure 4. Marginal Interaction Between Self-Concept Organization and Positive Importance for Self-Judgment



APPENDIX I

APPENDIX I

Figure 5. Interaction Between Self-Concept Organization and Positive Importance for Creative Task Preference



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