

The Cessation of Rumination Through Self-Affirmation

Sander L. Koole, Karianne Smeets, Ad van Knippenberg, and Ap Dijksterhuis
University of Nijmegen

Drawing from self-affirmation theory (C. M. Steele, 1988) and L. L. Martin and A. Tesser's (1989, 1996) theory of ruminative thinking, the authors hypothesized that people stop ruminating about a frustrated goal when they can affirm an important aspect of the self. In 3 experiments participants were given failure feedback on an alleged IQ test. Failure feedback led to increased rumination (i.e., accessibility of goal-related thoughts) compared with no-failure conditions (Studies 1 and 2). Rumination was reduced when participants could self-affirm after failure (Studies 1 and 2) or before failure (Study 3). In Study 3, self-affirmation led to increased positive affect on a disguised mood test and more positive name letter evaluations. Moreover, the obtained increase in positive affect mediated the effect of self-affirmation on rumination. It is concluded that self-affirmation may be an effective way to stop ruminative thinking.

Sometimes people cannot help thinking about the same thing over and over again. Those who are attempting to get rid of surplus body weight often find that their minds keep dwelling on images of food (Herman & Polivy, 1993; Wegner, 1989). Thoughts related to a forthcoming exam may interrupt a student's concentration at unexpected moments, even when the event is still 1 month away (Lepore, 1997). And even after finding a new romantic partner, lovers may still entertain vivid daydreams about an old flame (Wegner & Gold, 1995).

The experience of repetitive thoughts in the absence of immediate environmental cueing is commonly called *ruminative thinking* (Beckmann, 1994; Martin & Tesser, 1989, 1996; Nolen-Hoeksema & Morrow, 1991). Although certain forms of ruminative thinking may be helpful in coping with stress and goal achievement (e.g., Taylor & Schneider, 1989), ruminations can unwisely occupy attentional capacity and interfere with what one is trying to achieve (Brunstein & Gollwitzer, 1996; Kuhl & Helle, 1986; Mikulincer, 1989). Furthermore, certain negative ruminative thoughts may be experienced over a period of years, resulting in decreased psychological well-being and contributing to the development of depression (McIntosh & Martin, 1992; Nolen-Hoeksema, 1987; Pyszczynski & Greenberg, 1987). Con-

sequently, it is of interest to explore how people can control and regulate their ruminative thinking.

In the present article we investigate a specific regulatory mechanism that may protect people from (negative) ruminative thoughts. More specifically, we examined whether failure-induced ruminative thinking can be stopped by affirming an important unrelated aspect of the self (see Steele, 1988; Tesser & Cornell, 1991). In the following paragraphs we discuss a model of the processes that instigate ruminative thinking. Drawing on this theoretical understanding of ruminative thinking, we will elaborate on different ways of stopping ruminative processes, including the proposed self-affirmation route. Although in theory ruminative thinking can be evaluatively positive or negative, our focus is on negative ruminative thoughts.

The Instigation of Rumination

Human thought and action are generally goal directed (Austin & Vancouver, 1996; Carver & Scheier, 1981; Gollwitzer & Moskowitz, 1996; Heckhausen, 1991; Srull & Wyer, 1986). Ruminative thinking appears to be no exception to this rule, as the content of ruminations is clearly related to people's goal strivings (see Klinger, 1971, 1975). However, ruminative thinking is also unintentional; people do not control the instigation of rumination. At first glance, this may seem contradictory, because goal-directedness and intentionality are traditionally treated as near-synonyms. Nevertheless, recent findings have demonstrated that certain mental processes are goal directed and unintentional at the same time. For example, goal-directed behavior can be instigated on perception of environmental cues, without the need for conscious intent (Bargh & Gollwitzer, 1994). Likewise, inferring traits from behavioral episodes may occur without awareness, but only when the perceiver has the goal of forming an impression of a target person (Uleman & Moskowitz, 1994). Thus, there is no inherent contradiction in describing ruminative thinking as an instance of goal-directed and unintentional mental functioning.

Sander L. Koole, Karianne Smeets, Ad van Knippenberg, and Ap Dijksterhuis, Department of Social Psychology, University of Nijmegen, Nijmegen, the Netherlands.

We thank Agnes van den Berg and Laura Sweeney for helpful comments on an earlier version of this article. We also thank Daniel Wigboldus for statistical advice concerning the mediation analyses in Study 3 and Nol Bendermacher for his help in devising a computer program to compute the name letter effect.

Correspondence concerning this article should be addressed to Sander L. Koole, Department of Social Psychology, University of Nijmegen, P.O. Box 9104, 6500 HE Nijmegen, the Netherlands. Electronic mail may be sent to koole@psych.kun.nl.

In line with the general notion that ruminative thinking is goal directed, Martin and Tesser (1989, 1996) have recently proposed a model that integrates ruminative processes with more general conceptions of human self-regulation. Self-regulation theory (Carver & Scheier, 1981, 1990) posits that people regulate their thoughts and actions by comparing their current states with their desired goal states. If no discrepancy is perceived, people continue to do what they are doing, or they move on to other goals. In this case, there should be no ruminative thinking. When people do perceive a discrepancy between the current state and the desired state, they take steps to reduce this discrepancy. To the extent that these steps are repeatedly unsuccessful, people will begin to experience negatively toned ruminative thoughts. In other words, ruminative thinking is instigated when progress toward a desired goal state is threatened.

The cognitive mechanism that underlies ruminative thinking is most likely to be motivated activation of goal-related information (e.g., Kuhl & Helle, 1986; Martin & Tesser, 1989, 1996). Motivational states are known to have an intrinsic property of perseverance (Atkinson & Birch, 1970; Freud, 1915/1949; Lewin, 1935). This perseverance extends to the activation of goal-related information in long-term memory. Goschke and Kuhl (1993) suggested that the privileged status of unattained goals is explicitly encoded as a "commitment marker," which is temporarily tagged to the representation of the goal. This commitment marker then biases subsequent attempts to search long-term memory. This means that goal-related information is more likely to reach working memory, even if it is irrelevant to the immediate task at hand. Because only the output of this process reaches awareness, the resulting thoughts will have the phenomenal quality of appearing out of the blue, or popping into one's head. Thus, the unconscious operation of the instigating mechanism may be what gives ruminative thinking its unintentional phenomenology (cf. Higgins, 1996).

Motivated perseverance of goal-related thoughts was first empirically demonstrated by Zeigarnik (1927), who found that recall for uncompleted tasks was superior to recall for completed tasks. Although the replicability of the "Zeigarnik effect" has been disputed (e.g., Butterfield, 1964; van Bergen, 1968), accumulating evidence suggests that conflicting findings may have occurred because certain parameters of the effect were not understood (see Martin & Tesser, 1996). Perseverance of goal-related thoughts occurs mainly when the goals that have been frustrated are perceived as central to one's identity (Brunstein & Gollwitzer, 1996; Martin & Tesser, 1989, 1996; McIntosh & Martin, 1992), when goal completion is defined subjectively (Marrow, 1938), when implicit rather than explicit memory measures are used (Beckmann, *in press*), and when perseverance is measured some time after goal blockage (Martin & Tesser, 1989, 1996). Recent work, taking these parameters into account, has been consistently successful in obtaining evidence for the perseverance of goal-related thoughts after goal blockage (e.g., Beckmann, *in press*; Brunstein & Gollwitzer, 1996; Goschke & Kuhl, 1993; Kuhl & Kazén, 1994; Martin & Tesser, 1989; Wicklund & Gollwitzer, 1982).

To qualify as the instigating mechanism of ruminative thinking, the activation of goal-related thoughts in memory should be strongly associated with the occurrence of ruminative thoughts. The most direct way to assess this relationship would be to measure both accessibility of goal-related thoughts and ruminative

thinking after goal blockage and to examine correlational patterns to see if they are consistent with the idea that accessibility mediates ruminative thinking. Unfortunately, this strategy is problematic, because measures of accessibility would bring ruminative thoughts back into awareness, thus altering the normal process by which accessibility of goal-related thoughts leads to ruminative thinking. Nevertheless, there are several lines of research that strongly suggest that ruminative thinking and increased accessibility of goal-related thoughts are positively associated. First, as discussed in the preceding paragraphs, people whose progress toward higher order goals is threatened display both more ruminative thinking (Beckmann, 1994; Brunstein & Gollwitzer, 1996) and heightened accessibility of goal-related thoughts (Beckmann & Martin, 1994; Martin & Tesser, 1989, 1996). In addition, individuals who are known to have chronically elevated levels of ruminative thinking have been shown to display markedly stronger activation of thoughts related to personal concerns. For instance, individuals who are prone to depression display markedly stronger perseveration of unfulfilled intentions in working memory than individuals who are not prone to depression (Kuhl & Goschke, 1994; Kuhl & Helle, 1986). In a related vein, anxious individuals appear to be more distracted by words related to their personal worries than nonanxious individuals do (Mathews & MacLeod, 1985). In sum, the available evidence, although indirect, is consistent with the idea that accessibility of goal-related thoughts is the cognitive mechanism underlying ruminative thinking.

The Cessation of Rumination

Although the instigation of ruminative thinking is relatively effortless, its termination is considerably more difficult to accomplish (Beckmann, 1994; Pyszczynski & Greenberg, 1987; Wegner, 1994). The self-regulation model of ruminative thinking (Martin & Tesser, 1989, 1996) suggests three mechanisms to stop ruminative thinking: distraction, disengagement from the goal, and goal attainment.

Distraction may seem to be the easiest way to escape unwanted ruminative thoughts. However, this form of mental control has important pitfalls, as Wegner and his colleagues have documented (see Wegner, 1994, for a review). In particular, deliberate attempts to avoid thinking about something may paradoxically serve to heighten the cognitive accessibility of the unwanted thought (Wegner, Schneider, Carter, & White, 1987). In addition, people may choose distracters that are emotionally related to the unwanted thought, so that intended distracters actually come to serve as reminders of the unwanted material (Wenzlaff, Wegner, & Roper, 1988). Furthermore, mood states experienced during suppression may become associated with the unwanted thought. As a result, whenever the same mood is experienced, the unwanted thought will become salient again (Wenzlaff, Wegner, & Klein, 1991). Finally, distraction is likely to provide only temporary relief from ruminative thoughts, as it leaves the real discrepancy between one's current and one's desired state unchanged (see Martin & Tesser, 1989, 1996).

Giving up the desire for the blocked goal may be another way to effectively eliminate the existing self-regulatory discrepancy and thus, in the end, to stop rumination. But is disengagement an attractive way to end ruminative thinking? Probably not. People ruminate about goals they perceive as central to their well-being.

Giving up such goals often involves a sense of losing one's identity (Wicklund & Gollwitzer, 1982) and may lead to feelings of frustration, aggression, and depression (Klinger, 1975). Thus, disengagement may push people even further into ruminative thinking rather than offering an easy way out.

Ultimately, goal attainment appears to be the most effective way to stop rumination. However, as we know from personal experience, attaining one's goals is often fraught with difficulties. There are many reasons why this may be so. First, at least in modern Western society, individuals are inclined to set their goals unrealistically high (Armor & Taylor, 1998). Furthermore, the pursuit of many important, self-defining goals is best described as a never-ending story, because such goals are never attained completely during a lifetime (Wicklund & Gollwitzer, 1982). Thus, higher order goal striving is more an ongoing process of goal-related activity than a process marked by a discrete beginning and ending. In a somewhat related vein, higher order goals are often ill defined, making it difficult to know with certainty whether a goal has been reached (Emmons, 1992). Finally, a person may possess conflicting goals, such as wanting to appear strong and sensitive at the same time (Emmons & King, 1988). Thus, attaining one goal may result in the frustration of another, equally important goal. In sum, although goal attainment is theoretically an effective, long-term way to stop rumination, it is often difficult to achieve.

Flexibility Through Substitution

Thus far the present discussion has been rather pessimistic about people's ability to stop rumination. In everyday life, however, people are not continually lost in thought, pondering incessantly their unattainable desires. Instead, human goal striving seems highly flexible. Much of this flexibility derives from the fact that goals are hierarchically ordered (Carver & Scheier, 1981; Vallacher & Wegner, 1987). Each lower order goal is a potential route toward achieving a superordinate, higher level goal. If one lower order goal is blocked, alternative ways of obtaining the superordinate goal may still be available. Thus, people may achieve considerable flexibility in their goal-directed behavior by finding substitute ways to achieve their goals when one particular route has been blocked.

The operation of the *substitution principle* was first investigated in the early 1930s by Lewin and his coworkers, who found that an interrupted task was resumed less frequently when people performed an alternative task (Lissner, 1933; Mahler, 1933; see Tesser, Martin, & Cornell, 1996, and Gollwitzer & Kirchhof, 1998, for recent discussions of this work). Apart from these early investigations, the substitution principle did not receive much systematic attention until the 1980s, when Wicklund and Gollwitzer formulated their theory of *symbolic self-completion*, which extended and refined the Lewinian framework (Wicklund & Gollwitzer, 1982). Symbolic self-completion theory holds that people search for substitute activities to the extent that goal blockage poses a threat to a particular valued identity. That is, if the blocked goal is perceived as a threat to their identity, people experience a state of incompleteness, which propels them to renewed efforts aimed at winning back their sense of identity. Substitutive activities that satisfy the particular identity will be acted on. It is important to note that people will engage in these substitutive activities only when the blocked goal is perceived as an identity

threat. If this is not the case, people are not likely to engage in further efforts to attain the goal.

In recent years, self-completion researchers have begun to explore how the state of incompleteness is translated into substitutive activities. Brunstein and Gollwitzer (1996) found that failure on an identity-relevant task causes a reduction in positive affect and increases the frequency of ruminative thoughts. In addition, providing people with an opportunity to restore their valued identity was found to lead to increased feelings of energization. Internal analyses revealed that feelings of energization were generally associated with higher performance on a subsequent mental concentration test. Thus, it appears that performing a substitutive activity attenuated the negative impact of failure by promoting feelings of energization. Although these findings are still preliminary, they provide some support for the notion that affective and ruminative processes play an important role in the dynamic process of symbolic self-completion (cf. Gollwitzer & Kirchhof, 1998).

A parallel line of work addressing substitution processes is self-affirmation theory, initially developed by Steele and his colleagues (see Steele, 1988, for a discussion). According to self-affirmation theory, people strive to maintain a positive self-image. Whenever this image is threatened—for instance, by writing an essay advocating a message that runs counter to a personally held belief—a process is instigated that seeks to restore the self-image; for instance, by reasoning that writing an essay is really a rather unimportant activity. Self-affirmation theory holds that it is not necessary to dismiss each specific image threat that comes along, because the overarching goal of the system is the maintenance of a global positive self-image. Thus, people have the option of leaving a threat unrationalized and reinforcing one's overall self-image through other means. Self-affirmation theory was first tested in the area of dissonance, where it was found that people felt no need to reduce cognitive dissonance after affirming an important self-aspect. Next it was found that self-affirmation also serves as a protection against various other self-threats. For example, Liu and Steele (1986) found that self-affirmation eliminated increases in attributional activity due to learned helplessness, and Tesser and Cornell (1991) found that self-affirmation also blocked various other ego defensive processes. This latter work emphasized that self-affirmation theory has wide-ranging implications for the understanding of self-regulatory behavior.

In spite of the advances that have been made in self-affirmation research, there is no agreement about the processes that mediate the influence of self-affirmation. Some researchers have suggested that affect may serve as the key mediating variable (e.g., Tesser & Cornell, 1991). Although this hypothesis has received some support (Tesser, Pilkington, & McIntosh, 1989; see Tesser & Cornell, 1991), research has consistently failed to find that self-affirmation leads to changes in self-reported affect (see Steele, 1988). Moreover, Steele, Spencer, and Lynch (1993) found that directly manipulating affect did not produce the same effects as self-affirmation. However, it remains possible that self-affirmation is effective through affect that is not attributed to a specific cause (see Tesser et al., 1996). Alternatively, some researchers have suggested that self-affirmation is effective because it promotes trivialization of a blocked goal (i.e., it motivates downplaying of the goal's subjective importance; Simon, Greenberg, & Brehm, 1995). Although trivialization could be conceived of as a byprod-

uct of the substitution process instigated by self-affirmation, Simon et al. (1995) regard trivialization as the result of a more cognitively based comparison process between a salient personal value and the blocked goal. According to this interpretation, self-affirmation increases the salience of a personal value, which in turn leads people to compare the importance of the blocked goal and the personal value. As a result, the blocked goal may seem of lesser subjective significance, and consequently the motivational impact of goal blockage may be attenuated. To the extent that such cognitive reframing can account for self-affirmation effects, the trivialization account may constitute an alternative explanation to self-affirmation theory.

To summarize, symbolic self-completion theory and self-affirmation theory have been used to study substitution processes from different perspectives. Within the symbolic self-completion framework, substitutive activities have typically been studied as a dependent variable. In contrast, the opportunity for substitution is typically manipulated rather than measured within self-affirmation research. Symbolic self-completion theory posits that people substitute to attain a particular blocked identity goal, and only substitutes that accomplish this goal will be enacted. Self-affirmation research holds that substitutes need only to relate to the general goal of maintaining a positive self-image in order to be effective. In spite of these differences in focus, the two complementary theories offer a coherent account of substitution processes. Both theories hold that psychological functioning is directed toward higher order identity goals. As a result, people are flexible in dealing with specific threats to these higher order goals. Failure on a specific task may be compensated for by succeeding on another, objectively unrelated, task. Although the status of potential mediators is still controversial, theorists from both perspectives have suggested that affect may serve as a mediating variable of substitutive processes (e.g., Brunstein & Gollwitzer, 1996; Tesser et al., 1996).

The Present Research and Hypotheses

To the extent that ruminative thinking is an integral aspect of self-regulation, the substitution logic may be fruitfully applied to it as well. Simply put, if ruminative thinking is instigated by the blockage of a high-level goal, it may be stopped by affirming some other aspect of the self. We report three experiments in which we tested this hypothesis. In these experiments, we induced people to ruminate by exposing them to failure on an alleged intelligence test (cf. Beckmann, 1994; Martin & Tesser, 1989, 1996). In all three experiments we assessed the accessibility of goal-related cognitions. Note that accessibility of goal-related cognitions is not equated with ruminative thinking but is identified as the instigating mechanism of ruminative thinking.

Besides testing the hypothesis that self-affirmation can reduce motivated accessibility of goal-related cognitions, the present research aimed at gaining more insight into the processes that may mediate self-affirmation effects. As noted earlier, there is still no consensus about the process that mediates the influence of self-affirmation. Several variables have been proposed as potential mediators, including affect (Tesser & Cornell, 1991), variations in self-esteem (Steele et al., 1993), and trivialization (Simon et al., 1995). To investigate the validity of these potential candidates for mediation, the present experiments included measures of each of

these variables. Trivialization measures were collected in all three experiments. Moreover, in Study 3 we investigated affect and self-esteem as potential mediators of self-affirmation.

Study 1

In Study 1 we created a situation in which (a) a higher order goal could be frustrated, so that ruminative thinking would be instigated; (b) an opportunity to self-affirm could be manipulated; and (c) the accessibility of goal-related thoughts could be assessed. Frustration of a higher order goal was achieved by providing participants with failure feedback on an alleged intelligence test consisting of unsolvable items. Previous work that has used similar manipulations has shown that such failure feedback is perceived as self-threatening (e.g., Dutton & Brown, 1997; Heatherton & Polivy, 1991).¹ For example, Dutton and Brown (1997) and Heatherton and Polivy (1991) found that participants reported lowered self-esteem after receiving failure feedback on an intellectual task. Consistent with this line of reasoning, manipulations of failure feedback have been shown to lead to an increase in a variety of ego defensive responses, including greater prejudice toward members of stereotyped groups (Fein & Spencer, 1997), derogation of others' intellectual abilities (Beauregard & Dunning, 1998), and self-regulation failure (Baumeister, Heatherton, & Tice, 1993). In addition, failure on an intellectual task has been shown to increase ruminative thinking about the frustrated goal (Beckmann, 1994; Martin & Tesser, 1989, 1996; Mikulincer, 1989). For instance, Beckmann (1994) found that a similar manipulation led to a considerable increase in participants' incidence of perseverating thoughts about the failed test in a thought-listing questionnaire administered 90 s after they had been given failure feedback.

After the failure manipulation, some participants were allowed to affirm an important aspect of their self-concept, and others were not. We expected that the accessibility of thoughts related to the goal of demonstrating one's intelligence, enhanced after failure on the intelligence test, would be subsequently reduced by self-affirmation. An additional control group was included in which participants, immediately after receiving failure feedback, were informed that the failed test did not really measure intelligence. Thus, their failure would be disassociated, or "unlinked" (cf. McIntosh & Martin, 1992), from the higher order goal of demonstrating intelligence and, theoretically, ruminative thinking should be prevented from occurring (see Martin & Tesser, 1989, 1996; McIntosh & Martin, 1992).

We operationalized accessibility of goal-related thoughts as the accuracy of recognizing words related to the frustrated goal (Beck-

¹ For several reasons, we avoided incorporating a more direct manipulation check question concerning perceived ego threat. First, such questions may focus participants on the blocked goal and potentially interfere with spontaneous ruminative processes. Second, there is considerable evidence that suggests that such questions are prone to interpretive defenses. For example, when evaluating the source of ego threatening information, people may become especially critical (Baumeister, 1996; Pyszczynski, Greenberg, & Holt, 1985; Wyer & Frey, 1983). Thus, it may be difficult to interpret responses to questions regarding self-perceived ego threat. Finally, to the extent that defensive responses succeed in reducing perceived ego threat, they may attenuate effects of the ego threat manipulation (e.g., Greenberg & Pyszczynski, 1985).

mann & Martin, 1994, cited in Martin & Tesser, 1996; Goschke & Kuhl, 1993). Beckmann and Martin (1994) showed that people who ruminate after failing an intellectual task display enhanced recognition accuracy of words from the failed test. In a related vein, Goschke and Kuhl (1993) also found evidence that motivated accessibility of goal-related thoughts is reflected in higher recognition accuracy of words related to the goal. They also demonstrated that this effect is not due to controlled memory strategies. Thus, an unexpected recognition test of words related to the frustrated goal was considered to provide a valid measure of the level of activation of goal-related thoughts in memory.

Finally, in Study 1 we aimed to test the hypothesis that effects of self-affirmation are mediated by systematic variations in trivialization (Simon et al., 1995). Self-reported trivialization of the intelligence test was measured after the manipulation of self-affirmation. This measure was an adaptation of the trivialization index used by Simon et al. (1995). If self-affirmation reduces ruminative thinking by promoting trivialization of the frustrated goal, reductions in the accessibility of goal-related thoughts after self-affirmation should be accompanied by corresponding increases in trivialization of the frustrated goal.

Method

Participants and Design

Sixty undergraduate students from the University of Nijmegen (21 men and 39 women, average age = 21.5 years) were randomly assigned to three experimental conditions (relevant affirmation, irrelevant affirmation, immediate unlinking). They received Dfl. 7.50 (approximately \$4 U.S.) for their participation.

Procedure

Participants attended the experiment in groups of up to 6 persons per session. On arrival in the laboratory, participants were seated in separate cubicles, each containing an Apple Macintosh computer and a button box. They were informed that they would participate in a series of four unrelated studies and that they would receive all the instructions by means of a computer program. After the experimenter left, participants started the program by pressing a button.

The first study, described as a "study of values," was aimed at identifying important and unimportant aspects of the self. Following the procedure used by Tesser and Cornell (1991), participants first rated and rank ordered each of the six values of the Allport-Vernon-Lindzey Study of Values scale (AVL; Allport, Vernon, & Lindzey, 1960). The values listed were as follows: aesthetics, appreciation of the fine arts; social, an interest in caring for others and their rights; political, having influence in society; religion, an interest in theology and church matters; economic, an interest in business and finances; and theoretical, an interest in scientific theory and research.

The next study, described as an "intelligence test," included our manipulation of goal frustration. Modeled after a similar paradigm used by Beckmann (1994) and Beckmann and Martin (1994), it was composed of six verbal analogies from an existing intelligence test (Drenth & Wieringen, 1969), modified in such a way that correct responses were impossible. This test was said to be a good measure of analytic ability, "an ability that has been found to correlate strongly with general intelligence" and to be "a good predictor of a successful career in numerous areas." After brief instructions, the verbal analogies appeared one by one on the computer screen. Each analogy consisted of a sentence with two blanks. Participants were to indicate which two words from two rows displayed on the screen

would form a correct analogy. Participants had 1 min to complete each analogy. The remaining time was displayed on an alarm clock in the lower left corner of the screen. If participants did not type in their response within 1 min, the computer made an auditory signal and displayed a verbal message stating that the answer had to be typed immediately. After typing in a response, a message appeared on screen stating "That was not the correct answer," after which the next analogy appeared. After the last analogy, participants were informed that their total score amounted to zero.

After this, participants in the relevant-affirmation and irrelevant-affirmation conditions moved on to the next study, described as a study of people's general interests and preferred activities. In the relevant-affirmation condition participants received a 10-item AVL subscale (in Dutch) of the category they had previously indicated was most important to them. In the irrelevant-affirmation condition they received the subscale of the category they had indicated was least important to them. In the immediate-unlinking condition participants were informed that the "intelligence test" had been manipulated and therefore was totally uninformative regarding their true intelligence.

After this, participants completed a 6-min filler task, which we included to allow the passive activation of words from the intelligence test to decay. In addition, research by Martin and Tesser (described in Martin & Tesser, 1989, 1996) has shown that, immediately after goal frustration, participants tend to suppress goal-related material from memory. Next we administered a surprise test of recognition of words from the intelligence test. The recognition test consisted of 36 words: 12 words from the six verbal analogies and 24 distracter words, appearing in a random order. Distracter words were semantically unrelated to the words from the intelligence test. All words appeared in the center of the computer screen. For every word appearing on the screen, participants were asked to indicate as quickly as possible whether this word had previously appeared in one of the six verbal analogies by pushing the buttons marked *yes* or *no* on the button box. Two seconds after the button was pushed, the next word appeared on the screen.

After the recognition test, participants were asked two questions assessing trivialization of the intelligence test: (a) "There are many things in life that are worse than getting a bad score on an IQ test" and (b) "There are many things in life that are more important than getting a good score on an IQ test." These items were rated on 7-point scales (1 = *disagree completely*, 7 = *agree completely*).

After answering these questions, participants were debriefed very carefully. First they were asked to state their opinion about the purpose of the various studies. Next, they were asked if they thought any of the studies might be related to each other. If they thought this might have been the case, they were asked to indicate how they thought the studies might have been related. After this, the true nature of the experiment was explained. After checking if all participants understood the true nature of the experiment, we thanked, paid, and dismissed them. We removed the data of 3 participants (1 in the relevant-affirmation condition and 2 in the irrelevant-affirmation condition) from the data set because they indicated during debriefing that they had been suspicious about the intelligence test.

Results

Manipulation Check

As a manipulation check, we counted the number of times participants endorsed the value of the particular AVL subscale that they had been administered and compared the relevant- and irrelevant-affirmation conditions. Note that the reported scores were made on different AVL scales, because the scales were matched to each participant's personal value system. Participants in the relevant-affirmation condition endorsed the value of the AVL subscale considerably more often than participants in the irrelevant-affirmation condition, $F(1, 35) = 91.14$, $p < .001$, ($M = 16.8$ vs. $M = 12.4$). Thus, the self-affirmation manipulation

appeared successful in giving only participants in the relevant-affirmation condition the opportunity to affirm a personally important value.

Recognition Accuracy

In signal detection analysis, d' is commonly used as a measure of recognition accuracy (Green & Swets, 1966). This measure takes both the number of correct recognitions (hits) and the number of incorrect recognitions (false alarms) into account. However, because of the limited number of recognitions in the present study, it was not possible to calculate d' . Therefore, we calculated A' , a nonparametric equivalent of d' , for each participant (Pollack, 1970; Pollack & Norman, 1964). The resulting values served as the dependent variable in a three-level one-way analysis of variance (ANOVA; affirmation: relevant vs. irrelevant, and immediate unlinking). Average A' 's in the three conditions are presented in Table 1. The overall effect of experimental condition was significant, $F(2, 54) = 3.57, p < .04$. As expected, recognition accuracy in the irrelevant-affirmation condition was higher than recognition accuracy in the relevant-affirmation condition, $F(1, 54) = 4.24, p < .05$, and recognition accuracy in the immediate-unlinking condition, $F(1, 54) = 6.38, p < .02$. Recognition accuracy was not significantly different between the relevant-affirmation and the immediate-unlinking conditions, $F(1, 54) = 0.20, p < .66$.

Trivialization

We averaged the two trivialization items into one index (Cronbach's $\alpha = .87$). The resulting trivialization scores did not vary systematically across the experimental conditions (all $ps > .14$).

Discussion

The accuracy of recognition of words from the intelligence test was lower in the relevant-affirmation and immediate-unlinking conditions than in the irrelevant-affirmation condition. This indicated that both self-affirmation and immediate unlinking indeed led to lower accessibility of thoughts related to the blocked goal. It is interesting that the effect of affirmation on recognition accuracy was approximately equal in magnitude to the effect of immediately unlinking the failure from the higher order goal of demonstrating intelligence. Self-affirmation did not result in increased trivialization of intelligence tests in general. Thus, the effect of self-affirmation on the accessibility of ruminative thoughts cannot be explained by trivialization. Overall, these results provide preliminary support for the hypothesis that self-affirmation can stop

ruminative thinking after ego threat by promoting self-integrity at a higher level in the goal hierarchy.

Although the results of Study 1 are consistent with the hypothesis that self-affirmation can stop rumination, the accessibility measure used in Study 1 required participants to engage in the conscious retrieval of information related to the frustrated goal. Thus, it remained to be seen whether the effects observed in Study 1 could be replicated using an accessibility measure without any explicit reference to the frustrated goal. One goal of Study 2 was to address this issue.

Study 2

The main innovation in Study 2 was the use of a lexical decision task to assess accessibility of goal-related thoughts (e.g., Dijksterhuis & van Knippenberg, 1996; Macrae, Bodenhausen, Milne, & Jetten, 1994; Neely, 1977). In this task, activation of goal-related thoughts is indicated by faster responses to words that are related rather than unrelated to the goal. Therefore, we expected that participants who had experienced failure on an IQ test would display faster response latencies to words that were related to intelligence than to words that were unrelated to intelligence. No such effect was expected for participants who had not been exposed to a failure experience and those who had been able to self-affirm. If this pattern were obtained, it would provide a more convincing demonstration that self-affirmation can stop the spontaneous, automatic occurrence of ruminative thoughts, because the lexical decision task did not contain any explicit reference to the frustrated goal. Moreover, finding converging evidence across different measures of accessibility that self-affirmation is able to stop ruminative thinking would enhance our confidence in the results obtained in Study 1.

The design of Study 2 included a different control group than the one used in Study 1. In Study 1 the control group was exposed to the same failure treatment as the other participants but was told that the intelligence test really did not measure anything important. Although, theoretically, ruminative processes can be expected to have stopped for this group, such a condition may not constitute an appropriate baseline for assessing the accessibility of the experimental words. Therefore, in Study 2 we used a control group that was not exposed to the failure treatment.

Method

Participants and Design

Seventy-one undergraduate students from the University of Nijmegen (28 men and 43 women, average age = 21.0 years) were randomly assigned to three experimental conditions: relevant affirmation, irrelevant affirmation, or no-failure control. Participants received Dfl. 5 (approximately \$2 U.S.) for their participation.

Procedure

For all participants, the same equipment was used as in Study 1. As in Study 1, participants in the relevant- and irrelevant-affirmation conditions first rated and ranked the six values of the AVL Scale and then proceeded with the "intelligence test" that supplied failure feedback. Next, the opportunity for self-affirmation was manipulated, and a distracter task was administered. Participants in the no-failure control condition were not exposed to any of these experimental manipulations.

Table 1
Mean Recognition Accuracy (A') as a Function of
Condition in Study 1

Condition	Recognition accuracy	SD
No affirmation	.92 _b	.08
Affirmation	.86 _a	.08
Immediate unlinking	.85 _a	.10

Note. Means that do not share the same subscripts are significantly different from each other ($p < .05$).

All participants were subsequently asked to participate in a study involving a lexical decision task. They were informed that a number of letter strings would appear individually in the center of the computer screen. Some of these strings would be genuine words, whereas others would be nonwords. Participants were asked to decide as quickly and accurately as possible whether the presented letter string was a word or a nonword by pushing one of the buttons marked *yes* and *no* on the button box. Two seconds after the button was pushed, the next word appeared on the screen. In total, 64 letter strings were presented, consisting of 32 existing Dutch words and 32 nonsense words. The 32 Dutch words were trait words gathered from a pilot study. Eight words were related to intelligence (e.g., *smart*), 8 control words were unrelated to intelligence but matched to the intelligence words by valence and word length (e.g., *kind*), and the remaining 16 words were distracter items. The presentation order of the items was randomized for each participant, and response latencies were recorded using appropriate software.

After completing the lexical decision task, participants in the relevant- and irrelevant-affirmation conditions were asked two questions assessing trivialization of the intelligence test. Participants were then debriefed as in Study 1, paid, and dismissed. We removed the data of 3 participants (2 in the relevant-affirmation condition and 1 in the irrelevant-affirmation condition) from the data set because their answers indicated suspicion about the experimental feedback.

Results

Manipulation Check

We counted the number of endorsements of the value of the particular AVL subscale that had been administered to each participant and compared them between conditions. As in Study 1, participants in the relevant-affirmation condition endorsed the value of the AVL subscale more frequently than participants in the irrelevant-affirmation condition, $F(1, 47) = 60.19, p < .001$ ($M = 16.8$ vs. $M = 13.2$).

Lexical Decision Latencies

For each participant, the computer recorded both the response (i.e., word or nonword) and the latency of response for each of the presented items. Errors were infrequent (2.0% across the experimental trials); when they did occur, they were excluded from the statistical analysis. To reduce skewness in the distribution, we excluded from all analyses response latencies longer than 1,000 ms (3.0% of the responses). The dependent variable of interest was the mean time taken by participants to respond to the intelligence and the control words.

Preliminary analyses indicated that the average response latencies in the irrelevant- and relevant-affirmation conditions were somewhat—albeit not significantly—slower than the average response latencies in the no-failure control condition, $F(2,$

$68) = 1.59, p = .21$ ($M = 553$ ms vs. $M = 520$ ms). Perhaps participants in the no-failure control condition were less fatigued, and hence quicker, than the other participants, who had earlier exerted themselves trying to solve a number of impossible IQ test items. Alternatively, although participants were assigned at random to the experimental conditions, there may have been pre-existing individual differences in general speed of responding between conditions. Such individual differences are indeed a common finding in response latency data (Fazio, 1990). Given this variability in the general speed of responding, it is recommended that mean response times for control words be used as a within-subject baseline (cf. Fazio, 1990). Variations in accessibility between conditions are thus indicated by the difference in response latency for intelligence words and control words: To the extent that response latencies are quicker for intelligence words than for control words, thoughts related to intelligence can be assumed to be more accessible in memory.

We submitted the mean response latencies for intelligence and control words to a 3 (experimental condition: irrelevant affirmation, relevant affirmation, and no-failure control) \times 2 (word type: intelligence vs. control) mixed-model ANOVA with repeated measures on the second factor. Relevant means are displayed in Table 2. The analysis yielded the expected interaction effect between experimental condition and word type, $F(2, 68) = 3.53, p < .04$. Simple effects analysis showed that participants in the irrelevant-affirmation condition were quicker to respond to the intelligence words than to the control words, $F(1, 24) = 7.04, p < .02$. This effect did not occur for participants in the relevant-affirmation and no-failure control conditions (both F s < 1).

Trivialization

We averaged the two trivialization items into one index (Cronbach's $\alpha = .86$). The resulting trivialization scores did not vary systematically across the irrelevant- and relevant-affirmation conditions ($F < 0.15$).

Discussion

Consistent with earlier findings (e.g., Beckmann, 1994; Martin & Tesser, 1989, 1996), thoughts related to intelligence were more accessible after failure on an alleged intelligence test in the irrelevant-affirmation group but not in the control group, which did not experience failure. In addition, and most relevant to our central hypothesis, there was no evidence that thoughts related to intelligence were more accessible in the relevant-affirmation group. Thus, the findings of Study 2 conceptually replicate those of Study 1. Unlike Study 1, however, the accessibility measure that

Table 2
Mean Reaction Times (in Milliseconds) as a Function of Condition and Word Type in Study 2

Condition	Word type		Difference
	Intelligence-related	Not intelligence-related	
No affirmation	540	566	-26
Affirmation	555	549	+6
Control	524	516	+8

we used in Study 2 avoided any explicit reference to the blocked goal. Thus, Study 2 shows that the findings of Study 1 are not limited to a particular accessibility measure. In addition, Study 2, like Study 1, found no evidence that self-affirmation led to increased trivialization of intelligence tests in general.

Study 3

The results of Studies 1 and 2 support the notion that self-affirmation can stop ruminative thinking. Nevertheless, it is possible that affirming a relevant value was somehow more cognitively distracting than affirming an irrelevant value. Study 3 was designed to address this alternative explanation. In Study 3 the opportunity to self-affirm was manipulated prior to the administration of the goal-frustration task. This way, it was very unlikely that self-affirmation would distract participants from their failure on the intelligence test, although substitutional effects of self-affirmation are known to occur even when the affirmation manipulation precedes a goal-frustrating event. For example, Tesser and Cornell (1991; Experiments 2 and 3) found that self-affirmation prior to a dissonance-arousing event led to reduced attempts to restore self-integrity through dissonance reduction. In short, if self-affirmation was effective in Studies 1 and 2 by cognitively distracting people from their failure, manipulating self-affirmation prior to goal blockage should have no effect on ruminative thinking, because people would not yet be ruminating at the time they self-affirm. On the other hand, if self-affirmation reduced ruminative thinking in these studies because it promoted higher order goal attainment, manipulating self-affirmation prior to goal blockage should still be effective.

In Study 3 we also sought to explore whether the effect of self-affirmation on rumination may be explained by situational variations in affect or self-esteem. We took special care to use unobtrusive, implicit measures of these constructs. Implicit measures are generally less subject to social desirability concerns (Greenwald & Banaji, 1995). We had other substantive reasons to use implicit measures of affect and self-esteem rather than standard, self-report measures. Turning to mood first, an implicit mood test may be more likely to tap nonspecific affect, the type of affect that Tesser et al. (1996) proposed as the most likely candidate for mediation. Therefore, we administered a validated measure of implicit affect after the self-affirmation manipulation (Hass, Katz, Rizzo, Bailey, & Moore, 1992). The theoretical rationale behind this test is much the same as for any projective test: participants' selection of mood words in response to ambiguous stimuli is presumed to be indicative of how participants are feeling at the time. Considering that previous work has failed to find self-affirmation effects on self-reported affect measures (Steele et al., 1993), it seemed more likely that an implicit mood test would be able to detect differences in affect that were not attributed to any specific cause, the supposed mediator of self-affirmation.

In Study 3 we also sought to explore situational variations in self-esteem as a potential mediator of self-affirmation. However, the mere administration of explicit measures of self-esteem has been found to exert a direct influence on ego defensive processes (e.g., Greenberg et al., 1993; Steele et al., 1993). Most relevant to the present work, self-report assessment of self-esteem may have the unintended side effect of focusing participants on their affirmational resources (Steele et al., 1993). Thus, obtaining an explicit

measure of self-esteem might interfere with the very process it was meant to study. Consequently, we deemed desirable an implicit self-esteem measure. Although a widely accepted measure of implicit self-esteem is still lacking, some of the relevant literature suggests that positive self-views may be reflected unconsciously in more positive evaluations of one's name letters compared to evaluations of the remaining letters of the alphabet, a phenomenon known as *the name letter effect* (Greenwald & Banaji, 1995; Hoorens, 1990; Nuttin, 1985). Moreover, in a recent study, Koole and van Knippenberg (1998) found that relative liking for name letters is strongly correlated with explicit self-evaluations, particularly when individual differences in self-enhancement are taken into account. Thus, the measurement of name letter evaluations may provide insight into self-evaluations, without invoking the problems associated with explicit measurement of self-evaluations. To investigate this possibility, we assessed participants' name letter evaluations in Study 3 after the self-affirmation manipulation had taken place.

Method

Participants and Design

Seventy undergraduate students from the University of Nijmegen (21 men and 48 women, average age = 21.1 years) were randomly assigned to two experimental conditions (relevant affirmation and irrelevant affirmation). Participants were paid Dfl. 7.50 (approximately \$4 U.S.).

Procedure

The same equipment was used as in Study 1. It was explained to the participants that the investigation involved a series of unrelated studies. The first study was described as one involving subliminal perception—the disguised mood test (Hass et al., 1992). Participants were informed that during this study, words would be flashed on the computer screen for approximately 20 ms and then be masked by a string of Xs. Participants were told that although this presentation time was too brief for conscious recognition, their subconscious would be able to perceive the presented word. If they selected—by guessing, if necessary—a word that felt similar in meaning to the feeling they had experienced while the word was being flashed, their subconscious would guide their decisions.

In reality, the word flashed on the computer screen was always a nonsense word (e.g., *LOWN*). Apart from some filler items, one of the response words was always a positive or a negative mood label (e.g., *DOWN*), whereas the other response words were affectively neutral but similar in length and appearance (e.g., *DAWN*, *GOWN*, *TOWN*). The selection of mood words is presumably indicative of how the participants are feeling at the time of selection (cf. Hass et al., 1992, for a further explanation of the rationale of this test). The premanipulation mood test consisted of 10 positive mood items, 10 negative mood items, and 5 filler items presented in a random order.

After the premanipulation mood test, the “subliminal perception study” was interrupted, ostensibly because it would take awhile for the subconscious to process the information that had been presented subliminally. During this time participants were asked to take part in an “unrelated” study, supposedly conducted by the university's personality department. The first part of this study consisted of the self-affirmation manipulation used in Study 1. The second part consisted of the same bogus intelligence test used in Study 1. After this, participants continued with the second part of the “subliminal perception” study, which consisted of 10 positive mood items, 10 negative mood items, and 5 fillers presented in a random order.

On completion of the postmanipulation mood test, participants started with an “unrelated” study concerning aesthetic preferences. Participants

were asked to evaluate each letter of the alphabet on 7-point scales (1 = *extremely ugly*, 7 = *extremely beautiful*). Letters of the alphabet appeared separately on screen and were presented in a random order. After a 3-min filler task, a surprise recognition test of words from the intelligence test was administered. Postexperimental questions and the debriefing procedure were the same as in Study 1. We removed the data of 4 participants (divided equally between conditions) from the data set because they indicated during the debriefing that they had been suspicious about the failure feedback. After the purpose of the experiment was made clear, participants were requested to write down their full names and signatures on a consent form to indicate that they agreed to let their data be used for scientific purposes.

Results

Manipulation Check

We counted the number of endorsements of the value of the particular AVL subscale that had been administered to each participant and compared them between conditions. As in the two previous studies, participants in the relevant-affirmation condition endorsed the value of the AVL subscale more often than participants in the irrelevant-affirmation condition, $F(1, 62) = 108.90$, $p < .001$ ($M = 16.8$ vs. $M = 12.8$).²

Recognition Accuracy

We computed values of A' for each participant. These values served as the dependent variable. As expected, recognition accuracy in the irrelevant-affirmation condition was higher than recognition accuracy in the relevant-affirmation condition, $F(1, 62) = 4.11$, $p < .05$ ($M = .87$ vs. $M = .81$).

Affect

To assess the internal consistency of the positive and negative affect scales, we computed split-half reliability coefficients for the total sample's premanipulation scores ($N = 66$). Coefficients for the positive and negative scales were .68 and .65, indicating adequate reliability. We subsequently created a positive affect index by summing the number of positive words selected out of the 10 positive mood items, and we created a negative affect index by summing the number of negative words selected out of the 10 negative mood items.

Comparison of the mood prescores indicated that there were no premanipulation differences in mood between the experimental conditions ($F < 1$). We analyzed postmanipulation mood scores for each mood scale separately, with corresponding mood prescores as a covariate. Participants in the relevant-affirmation condition had higher positive mood scores than participants in the irrelevant-affirmation condition, $F(1, 61) = 5.20$, $p < .03$ (adjusted $M_s = 4.00$ vs. 2.74). No statistically reliable effect on negative mood scores was observed ($F < 1$).

Name Letter Evaluations

We computed relative name letter evaluations according to the procedure outlined by Kitayama and Karasawa (1997). First we computed a baseline evaluation of each letter for participants whose names did not include it. Next, we computed for each participant a difference score between the evaluations of each of

Table 3

Mean Relative Evaluations of Name Letters as a Function of Condition and Letter Type in Study 3

Condition	Initials		Remaining letters	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
No affirmation	0.46	1.03	-0.15	0.61
Affirmation	0.98	1.05	0.04	0.65

Note. Higher numbers indicate more favorable relative letter evaluations.

the name letters and the corresponding no-name evaluations to yield a relative liking score. A name letter effect would be implied by positive relative evaluations. Subsequently, two summary measures were obtained for each participant: the mean relative evaluation of his or her initials, and the mean relative evaluation of the remaining letters of his or her name. These measures were uncorrelated with postmanipulation mood scores (both $r_s < .10$).

We analyzed the relevant means, given in Table 3, in an ANOVA with one between-subjects variable (affirmation: relevant vs. irrelevant) and one within-subjects variable (position: initial letters vs. remaining name letters). There was a main effect of affirmation on the relative evaluation of name letters, indicating that the relative evaluation of name letters was more positive in the relevant-affirmation condition than in the irrelevant-affirmation condition, $F(1, 64) = 4.07$, $p < .05$. Across conditions, evaluations of initial letters were significantly different from no-name letter baseline evaluations, $t(1, 31) = 5.17$, $p < .001$, but evaluations of the remaining name letters did not differ from baseline ($-1.5 < t_s < 0.5$ in both conditions). This finding, although not predicted, is consistent with earlier reports that the name letter effect is more easily demonstrated with initial name letters than with noninitial name letters (Johnson, 1986, described in Greenwald & Banaji, 1995; Kitayama & Karasawa, 1997; Nuttin, 1987). The effect of position was highly significant, $F(1, 64) = 42.82$, $p < .001$, indicating that the relative evaluation of initials was higher than the relative evaluation of the remaining name letters. Although the Affirmation \times Position interaction did not reach significance, $F(1, 64) = 1.99$, $p < .17$, the main effect of affirmation was significant for initials, $F(1, 64) = 4.14$, $p < .05$, but not for the remaining name letters, $F(1, 64) = 1.49$, *ns*.

² At the beginning of the experimental session, participants filled out a Dutch translation of the 24-item version of the Action Control Scale (Kuhl, 1994). Research by Kuhl and his colleagues (see Kuhl & Beckmann, 1994, for a recent overview) has shown that state-oriented individuals tend to experience more uncontrollable ruminations than action-oriented individuals. It therefore seemed of interest to examine whether self-affirmation effects were moderated by individual differences in action control. We divided participants using a median split on the failure-related scale of the Action Control Scale. This factor was subsequently included in a series of 2 (affirmation: relevant vs. irrelevant affirmation) \times 2 (action control: state vs. action orientation) between-subjects ANOVAs. No significant main effect or interaction effects involving action control emerged. The present failure induction may have been too strong to reveal the influence of individual differences (cf. Beckmann, 1994, who also failed to obtain effects of action control in a highly similar paradigm). As part of the original design of Study 3, effects involving the action control factor were retained in the analyses reported in the main body of the article.

Trivialization

We averaged the two trivialization items into one index (Cronbach's $\alpha = .75$). The resulting trivialization scores did not vary as a function of the affirmation manipulation ($p > .30$).

Mediation Analyses

Our final series of analyses investigated potential mediators of the effect of affirmation on the accuracy of recognition of words from the intelligence test (i.e., on the accessibility of goal-related cognitions). We executed path analyses to examine two potential mediators: positive affect and name letter evaluations. For any of these variables to qualify as a mediator, three conditions must be met (Baron & Kenny, 1986). First, the affirmation manipulation must have a significant effect on the potential mediator. Second, the potential mediator must have a significant relationship with recognition accuracy. Finally, if any of these variables is the mediating mechanism, then the effect of affirmation on recognition accuracy should be eliminated or greatly diminished when the mediator variable is controlled for.

Positive affect. As Figure 1 shows, the direct relationship between affirmation and recognition accuracy was significant, $\beta = .27$, $t(1, 62) = 2.03$, $p < .05$. Second, affirmation was predictive of positive affect, $\beta = .31$, $t(2, 63) = 2.67$, $p < .01$. Third, when affirmation and positive affect were entered into the equation simultaneously, differences in positive affect were predictive of recognition accuracy, $\beta = .38$, $t(1, 61) = 3.14$, $p < .005$. Moreover, the direct relationship between affirmation and recognition accuracy became smaller and no longer significant, $\beta = .16$, $t(61) = 1.25$, $p < .21$. Using Baron and Kenny's (1986) modification of the Sobel test (see Kenny, Kashy, & Bolger, 1998), the reduction that was due to positive mood was found to be statistically significant ($Z = 1.97$, $p < .05$). Thus, in line with expectations, differences in recognition accuracy indeed appear to have been mediated by differences in positive affect.

Name letter evaluations. Because relative name letter evaluations (in particular, evaluations of initials) were higher in the relevant-affirmation condition, it is possible that differences in name letter evaluations can account for the effect of affirmation on recognition accuracy. The analysis revealed that the initial and remaining name letter evaluations were uncorrelated with recognition accuracy (respective β s = .11 and .06, both p s $> .45$). Moreover, the main effect of affirmation remained significant after controlling for variations in name letter evaluations ($\beta = .30$, $p < .03$). Thus, no evidence was found that differences in name letter evaluations mediated the observed affirmation effect.

Discussion

In Study 3 affirmation of an important value again led to lower accuracy in recognizing words from the intelligence test than affirmation of an unimportant value. It is important to note that the opportunity to self-affirm was this time manipulated prior to the administration of the intelligence test. Thus, it appears highly unlikely that affirming a relevant value was effective merely because it was more distracting than affirming an irrelevant value. In addition, affirming a relevant value led to higher positive affect, as indicated by the disguised mood test, and higher implicit self-esteem, as indicated by more positive initial letter evaluations. Of these potential candidates for mediation, only positive affect was found to mediate the relationship between self-affirmation and the accuracy of recognizing words from the intelligence test. Considering that the implicit measures of affect and self-esteem are not yet well established, some caution is warranted in interpreting these results. For example, the absence of a correlation between measures of implicit affect and implicit self-esteem suggests that conventional knowledge based on self-report measures of affect and self-esteem, which usually are highly correlated (e.g., Heatherton & Polivy, 1991), is not applicable to these constructs in a straightforward manner. Nevertheless, the findings of Study 3 are

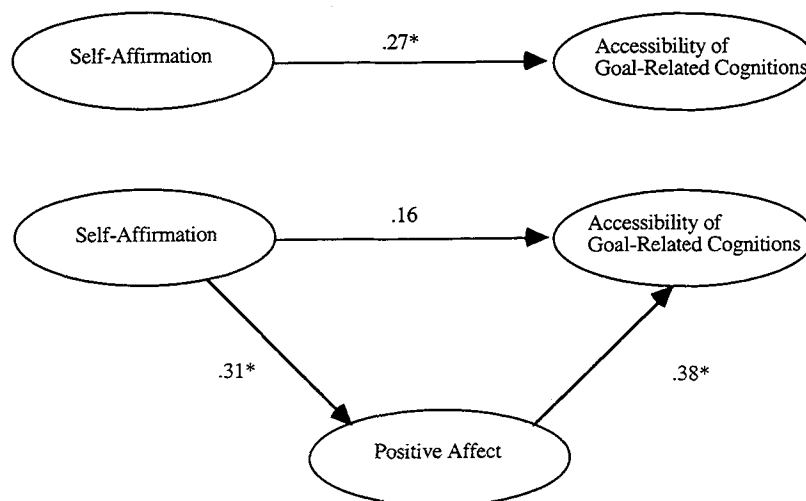


Figure 1. Path analyses depicting the mediating role of positive affect on accessibility of goal-related cognitions as a function of self-affirmation. $N = 66$. Coefficients are standardized betas. Betas marked by an asterisk are significant at the .05 level.

the first to provide direct support for the hypothesis offered by Tesser et al. (1996), that self-affirmation operates through affect of which the participant is not explicitly aware.

General Discussion

It appears that affirming an important aspect of one's self-concept can reduce the accessibility of failure-related cognitions. In three experiments students were exposed to failure on an alleged intelligence test. We hypothesized that exposure to failure on an ego relevant task would instigate motivated activation of failure-related cognitions. We manipulated self-affirmation by allowing students to affirm a value that was either perceived as very important or as very unimportant to the self (Steele & Liu, 1983; Tesser & Cornell, 1991). As expected, the activation of goal-related cognitions after failure decreased substantially when students were able to affirm an important value. Because motivated activation of goal-related cognitions has been implicated by Martin and Tesser (1989, 1996) and others (e.g., Kuhl & Goschke, 1994) as the critical instigating mechanism of ruminations, the present findings suggest that self-affirmation may be an important way to regulate ruminative thinking.

Our theoretical analysis identified several ways to stop ruminative thinking: goal attainment, disengagement, distraction, and substitution. In the present research, self-affirmation was completely unrelated to the goal of demonstrating one's intelligence. Therefore, it seems unlikely that self-affirmation increased participants' perceptions of their own intelligence, which otherwise might have promoted subjective goal attainment at this level. Furthermore, there was no evidence that self-affirmation led to enhanced trivialization of the importance of intelligence, suggesting that students did not psychologically disengage from the goal of demonstrating their intelligence as a result of self-affirmation. But what about distraction? This explanation seems unlikely as well, because affirming a relevant aspect of the self took approximately the same amount of time as affirming an irrelevant aspect of the self. Moreover, accessibility of goal-related cognitions was always measured more than 5 min after the failure experience. Earlier research has shown that after an interval of 5 min distraction is usually no longer effective (Martin & Tesser, 1989, 1996). It may still be argued that self-affirming information might have been a more powerful distracter than neutral information, distracting students' thoughts from failure for a longer period than ordinary distracters. In Study 3, however, we found that self-affirmation *before* failure was equally effective in reducing accessibility of failure-related cognitions. Without additional assumptions, this finding is inconsistent with the distraction hypothesis.

Overall, the present findings are compatible with the notion that self-affirmation reduced accessibility of failure-related cognitions by means of a process of motivational substitution (cf. Tesser et al., 1996). According to this account, affirming the self, although leaving intact the goal discrepancy at the level of demonstrating one's intelligence, reduced a goal-related discrepancy at a higher level, that is, the goal of thinking positively about oneself. Tesser and Cornell (1991) suggested that the common medium of motivational substitution may be affect. Consistent with this idea, we found in Study 3 that variations in positive affect, as indicated by higher scores on Hass et al.'s (1992) disguised mood test, were

able to explain variations in the accessibility of goal-related cognitions caused by the self-affirmation manipulation. As such, the present research is the first to provide direct evidence for Tesser and Cornell's hypothesis that self-affirmation processes are mediated by affect. It appears that affirming an important aspect of the self leads to positive affect, which in turn signals well-being (Schwarz & Bohner, 1996) and reduces accessibility of goal-related cognitions and, thus, ruminative thinking.

One may wonder how the present research relates to earlier findings by Steele and his colleagues, who found that self-affirmation did not lead to changes in affect (Steele & Liu, 1983) and that manipulated affect did not produce the same pattern of findings as self-affirmation (Steele et al., 1993). In Steele and Liu's (1983) research, affect was measured with explicit self-report measures, or was overtly manipulated, whereas in the present studies affect was assessed by means of an implicit, projective test (Hass et al., 1992), and self-affirmation was manipulated in a rather covert manner. As Tesser et al. (1996) pointed out, the use and misuse of self-defense mechanisms is most likely to be determined by affect of which people are not explicitly aware. Thus, self-ratings of affect and overt manipulations of affect are less likely to tap into the medium of self-affirmational processes.

The present research also explored the influence of self-affirmation on implicit self-evaluations. As expected, self-affirmation led to more positive implicit self-evaluations, as indicated by more positive evaluations of name letters. This finding is of considerable theoretical interest, because prior research, although it has been effective in demonstrating that a positive bias for name letters cannot be reduced to linguistic artifacts, has yielded little direct evidence that name letter evaluations are linked to important self-evaluative processes (see reviews by Greenwald & Banaji, 1995; Hoorens, 1990). Because Study 3 did not include no-failure control conditions, it is unclear from the present findings whether the influence of self-affirmation on name letter evaluations was independent of exposure to failure. To follow up on this question, we conducted another study, in which we manipulated self-affirmation without exposing participants to failure ($N = 46$) and assessed participants' name letter evaluations as in Study 3. Name letter effects for initials and noninitials were again highly significant (both $ps < .001$), but there was no significant difference between relevant and irrelevant affirmation conditions (all $Fs < 0.70$). Although not conclusive, these additional data suggest that self-affirmation restores the positivity of implicit self-evaluations after failure, rather than increasing the positivity of implicit self-evaluations per se. Overall, these findings support Tesser and Cornell's (1991) theory that self-evaluations are maintained rather than maximized.

Although we found no evidence that variations in the name letter effect were able to account for effects of self-affirmation on the accessibility of ruminative thoughts, caution is warranted in drawing conclusions about the mediational role of self-esteem. First, the current empirical status of the name letter effect as an indicator of implicit self-esteem, although bolstered by the present findings, remains largely untested. Indeed, much more evidence is required to assess the validity of this measure. Second, it may be questioned whether the implicit affect measure we used possesses adequate discriminant validity to discriminate between generalized affect and more specific affect related to self-evaluations. On the positive side, Hass et al. (1992) reported an unpublished study that

demonstrated that the disguised mood test is responsive to affect manipulations that do not constitute an ego threat. Moreover, scores on the disguised mood test were uncorrelated with implicit self-esteem, as assessed by name letter evaluations. Nevertheless, threats to self-esteem often invoke aversive emotions, making it difficult to distinguish between responses to ego threat and general emotional responses (e.g., Baumeister, 1996; Heatherton & Polivy, 1991). Thus, it is conceivable that less positive responses on the disguised mood test were due in part to increased perceptions of ego threat. Conceptually, cognitive regulation (responses to ego threat) and affect regulation (responses to emotional states) may be viewed as instances of the broader process of self-regulation (cf. Baumeister, 1996). Thus, high correspondence between ego threat and affect may be expected and therefore regarded as not particularly problematic on a conceptual level. Nevertheless, it seems desirable to further develop new, more subtle measurement tools to assess these different constructs, to achieve a clearer distinction between responses to ego threat and responses to general emotional states.

Limitations and Future Perspectives

In the present studies, self-affirmation was operationalized in only one way; namely, by means of affirming a value in a questionnaire. Obviously, in everyday situations there exist a multitude of ways to self-affirm. For example, one may self-affirm by performing better on a self-relevant task (Brunstein & Gollwitzer, 1996), by derogating others (Fein & Spencer, 1997), or by wearing value-affirming clothes (see Steele, 1988). One important question is: Which factors determine the particular route to self-affirmation that will be chosen? Some work suggests that people are pragmatic about the choice of the manner in which they self-affirm, using the first means to self-affirm that they encounter (Brunstein & Gollwitzer, 1996; Tesser & Cornell, 1991). However, other research suggests that some forms of self-affirmation may backfire, particularly if they remind people of their unresolved goal discrepancy (Blanton, Cooper, Skurnik, & Aronson, 1997). Applied to ruminative thinking, this work suggests the counterintuitive notion that self-affirmation may be most effective when it is least associated with the specific goal discrepancy that instigates ruminations. Thus, self-affirmation may be easier to achieve for people whose selves possess many distinctive cognitive aspects than for those whose selves consist of a relatively simple cognitive structure (Linville, 1985).

A somewhat related question is: When do people resort to self-affirmation instead of directly dealing with the unresolved goal? As explained earlier, direct ways of resolving blocked higher order goals—goal attainment, disengagement—are often fraught with difficulties. However, the possibilities for self-affirmation are probably also constrained by several factors. First, consistent with the notion that self-esteem-protecting behavior is ultimately motivated by a basic need to be accepted or liked by others (Baumeister & Leary, 1995), a self-affirming activity may be most effective when it is noticed by others (Mahler, 1933; Wicklund & Gollwitzer, 1982). However, when a receptive audience is available to witness a value-affirming action, people may choose to refrain from self-affirmation. Recent findings suggest that, when a direct route toward attaining the blocked goal and an opportunity for self-affirmation are simultaneously available, people may display

a preference for the direct route (Stone, Wiegand, Cooper & Aronson, 1997). The decision of whether to use an opportunity for self-affirmation may depend on one's psychological investment in the particular identity that is under threat. If one is highly committed to the identity that is implied by a blocked goal, he or she may remain focused on the goal blockage within this specific domain. In these cases, only substitutes that are relevant to the threatened identity may be effective (cf. Wicklund & Gollwitzer, 1982). Alternatively, if one is not particularly committed to the specific identity that is threatened, a broader range of substitutes may be effective, including those that are aimed at global self-affirmation. Thus, level of commitment may determine people's flexibility in using self-affirmation as compensation for a specific goal discrepancy.

Although the present research has demonstrated that self-affirmation can reduce accessibility of failure-related cognitions, it is not yet clear how long this reduction will last. Our analysis suggests that self-affirmation is effective because it restores one's global self-worth, thus reducing a higher order goal discrepancy, although the lower level discrepancy may still persist. According to this reasoning, the reduction in accessibility of failure-related cognitions should be relatively enduring. However, one may wonder what happens when the lower level discrepancy is again made salient. Possibly, a reminder of the lower level discrepancy may reinstate the threat to one's global self-worth and thus instigate the ruminative process again. Perhaps it is for this reason that people display a preference for dealing with a goal discrepancy directly instead of indirectly by means of self-affirmation (Stone et al., 1997). However, even when a certain goal discrepancy would reappear after some time, people may be better able to cope with it then. Frequently, self-affirmation may provide a much-needed mental break from a nagging goal discrepancy. Future work may examine the effects of self-affirmation over a longer time period and its influence on task resumption.

The present analysis suggests that self-affirmation is an important way to prevent the instigation of failure-related ruminative thinking. An important implication of this hypothesis is that individuals who lack self-affirmational resources should find it more difficult to stop their ruminative thinking. In line with this idea, chronic negative self-images are associated with depression and elevated levels of ruminative thinking (Pyszczynski & Greenberg, 1987). According to the present line of reasoning, chronic negative self-images may indicate a lack of self-affirmational resources (cf. Steele et al., 1993) and thus play an important part in maintaining a state of ruminative thinking. Interventions aimed at improving people's self-worth can be expected to provide relief for this undesirable state. It is important that the present theoretical analysis suggests that these interventions need not be directed toward reducing the specific goal discrepancy that caused the individual's ruminative state. Rather, any self-esteem-enhancing intervention is likely to reduce ruminative thinking. Furthermore, the behavioral passivity found in chronically depressed individuals (Kuhl & Helle, 1994) may limit the number of opportunities for engaging in self-affirming activities. Thus, therapeutic interventions could be aimed at helping depressed individuals to initiate new—and potentially self-affirming—activities. Although more research is needed to assess these suggestions, we encourage investigations along these lines.

Concluding Remarks

Existing models of human self-regulation have provided much insight into ruminative processes that occur after failure experiences (e.g., Brunstein & Gollwitzer, 1996; Klinger, 1975; Kuhl & Beckmann, 1994; Martin & Tesser, 1996; Pyszczynski & Greenberg, 1987). The present research adds to these findings that the psychological consequences of failure can be attenuated by self-affirmation. Besides increasing effort expenditure to reduce the immediate goal discrepancy (Brunstein & Gollwitzer, 1996; Wortman & Brehm, 1975), giving up pursuit of the goal (Klinger, 1975), and distraction (Nolen-Hoeksema & Morrow, 1991), restoring one's global self-worth may be an effective way to stop ruminative thinking.

References

- Allport, G. W., Vernon, P. E., & Lindzey, G. (1960). *Study of values* (3rd ed.). Boston: Houghton Mifflin.
- Armor, D. A., & Taylor, S. E. (1998). Situated optimism: Specific outcome expectancies and self-regulation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 309–379). New York: Academic Press.
- Atkinson, J. W., & Birch, D. (1970). *The dynamics of action*. New York: Wiley.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, 120, 338–375.
- Bargh, J. A., & Gollwitzer, P. M. (1994). Environmental control of goal-directed action: Automatic and strategic contingencies between situations and behavior. In W. D. Spaulding (Ed.), *Nebraska Symposium on Motivation: Vol. 41. Integrative views of motivation, cognition, and emotion* (pp. 71–124). Lincoln: University of Nebraska Press.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182.
- Baumeister, R. F. (1996). Self-regulation and ego-threat: Motivated cognition, self-deception, and destructive goal setting. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action* (pp. 27–47). New York: Guilford Press.
- Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1993). When ego threats lead to self-regulation failure: Negative consequences of high self-esteem. *Journal of Personality and Social Psychology*, 64, 141–156.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529.
- Beauregard, K. S., & Dunning, D. (1998). Turning up the contrast: Self-enhancement motives prompt egocentric contrast effects in social judgments. *Journal of Personality and Social Psychology*, 74, 606–621.
- Beckmann, J. (1994). Ruminative thought and the deactivation of an intention. *Motivation and Emotion*, 18, 317–334.
- Beckmann, J. (in press). Self-presentation and the Zeigarnik effect. In T. Gjesme & R. Nygard (Eds.), *Advances in motivation*. Oslo, Norway: Scandinavian University Press.
- Beckmann, J., & Martin, L. L. (1994). *Distraction and disengagement: How people stop ruminating*. Manuscript in preparation.
- Bergen, A. van (1968). *Task interruption*. Amsterdam: North-Holland.
- Blanton, H., Cooper, J., Skurnik, I., & Aronson, J. (1997). When bad things happen to good feedback: Exacerbating the need for self-justification with self-affirmations. *Personality and Social Psychology Bulletin*, 23, 684–692.
- Brunstein, J. C., & Gollwitzer, P. M. (1996). Effects of failure on subsequent performance: The importance of self-defining goals. *Journal of Personality and Social Psychology*, 70, 395–407.
- Butterfield, E. C. (1964). The interruption of task: Methodological, factual, and theoretical issues. *Psychological Bulletin*, 62, 309–322.
- Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag.
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, 97, 19–35.
- Dijksterhuis, A., & Knippenberg, A. van (1996). The knife that cuts both ways: Facilitated and inhibited access to traits as a result of stereotype activation. *Journal of Experimental Social Psychology*, 32, 271–288.
- Drenth, J. D., & Wieringen, C. W. van (1969). VAT '69 *Verbale Aanleg Testserie: Verbale analogiën* [VAT '69 Verbal Abilities Test Series: Verbal analogies]. Amsterdam: Swets & Zeitlinger.
- Dutton, K. A., & Brown, J. D. (1997). Global self-esteem and specific self-views as determinants of people's reactions to success. *Journal of Personality and Social Psychology*, 73, 139–148.
- Emmons, R. A. (1992). Abstract versus concrete goals: Personal striving level, physical illness, and personal well-being. *Journal of Personality and Social Psychology*, 62, 292–300.
- Emmons, R. A., & King, L. A. (1988). Conflict among personal strivings: Immediate and long-term implications for psychological and physical well-being. *Journal of Personality and Social Psychology*, 54, 1040–1048.
- Fazio, R. H. (1990). A practical guide to the use of response latency in social psychological research. In C. Hendrick & M. S. Clark (Eds.), *Research methods in personality and social psychology: Review of personality and social psychology* (Vol. 11, pp. 74–97). Newbury Park, CA: Sage.
- Fein, S., & Spencer, S. J. (1997). Prejudice as self-image maintenance: Affirming the self through derogating others. *Journal of Personality and Social Psychology*, 73, 31–44.
- Freud, S. (1949). *Collected papers* (Vol. 4). New York: Basic Books. (Original work published 1915)
- Gollwitzer, P. M., & Kirchhof, O. (1998). The willful pursuit of identity. In J. Heckhausen & C. S. Dweck (Eds.), *Motivation and self-regulation across the life-span* (pp. 389–423). New York: Cambridge University Press.
- Gollwitzer, P. M., & Moskowitz, G. B. (1996). Goal effects on thought and behavior. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 361–399). New York: Guilford Press.
- Goschke, T., & Kuhl, J. (1993). Representation of intentions: Persisting activation in memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 19, 1211–1226.
- Green, D. M., & Swets, J. A. (1966). *Signal detection theory and psychophysics*. New York: Wiley.
- Greenberg, J., & Pyszczynski, T. (1985). Compensatory self-inflation: A response to the threat to self-regard of public failure. *Journal of Personality and Social Psychology*, 49, 273–280.
- Greenberg, J., Pyszczynski, T., Solomon, S., Pinel, E., Simon, L., & Jordan, K. (1993). Effects of self-esteem on vulnerability-denying defensive distortions: Further evidence of an anxiety-buffering function of self-esteem. *Journal of Experimental Social Psychology*, 29, 229–251.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27.
- Hass, R. G., Katz, I., Rizzo, N., Bailey, J., & Moore, L. (1992). When racial ambivalence evokes negative affect, using a disguised measure of mood. *Personality and Social Psychology Bulletin*, 18, 786–797.
- Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology*, 60, 895–910.
- Heckhausen, H. (1991). *Motivation and action*. Berlin: Springer-Verlag.

- Herman, C. P., & Polivy, J. (1993). Mental control of eating: Excitatory and inhibitory food thoughts. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 491–505). Englewood Cliffs, NJ: Prentice Hall.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133–168). London: Guilford Press.
- Hoorens, V. (1990). Nuttin's affective selfparticles hypothesis and the name letter effect: A review. *Psychologica Belgica*, 30, 23–48.
- Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 1, pp. 233–265). New York: McGraw-Hill.
- Kitayama, S., & Karasawa, M. (1997). Implicit self-esteem in Japan: Name letters and birthday numbers. *Personality and Social Psychology Bulletin*, 23, 736–742.
- Klinger, E. (1971). *Structure and functions of fantasy*. London: Wiley.
- Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review*, 82, 1–25.
- Koole, S. L., & Knippenberg, A. van (1998). *What's in a name? Evidence for a link between name letter preference and self-esteem*. Manuscript in preparation.
- Kuhl, J. (1994). Action versus state orientation: Psychometric properties of the Action Control Scale (ACS-90). In J. Kuhl & J. Beckmann (Eds.), *Volition and personality* (pp. 47–59). Göttingen, Germany: Hogrefe & Huber.
- Kuhl, J., & Beckmann, J. (1994). *Volition and personality*. Göttingen, Germany: Hogrefe & Huber.
- Kuhl, J., & Goshke, T. (1994). State orientation and the activation and retrieval of intentions in memory. In J. Kuhl & J. Beckmann (Eds.), *Volition and personality* (pp. 127–153). Göttingen, Germany: Hogrefe & Huber.
- Kuhl, J., & Helle, P. (1986). Motivational and volitional determinants of depression: The degenerated-intention hypothesis. *Journal of Abnormal Psychology*, 95, 247–251.
- Kuhl, J., & Helle, P. (1994). Motivational and volitional determinants of depression: The degenerated-intention hypothesis. In J. Kuhl & J. Beckmann (Eds.), *Volition and personality* (pp. 283–296). Göttingen, Germany: Hogrefe & Huber.
- Kuhl, J., & Kazén, M. (1994). Self-discrimination and memory: State orientation and false self-ascription of assigned activities. *Journal of Personality and Social Psychology*, 66, 1103–1115.
- Lepore, S. J. (1997). Expressive writing moderates the relation between intrusive thoughts and depressive symptoms. *Journal of Personality and Social Psychology*, 73, 1030–1037.
- Lewin, K. (1935). *A dynamic theory of personality: Selected papers*. New York: McGraw-Hill.
- Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, 3, 94–120.
- Lissner, K. (1933). Die Entspannung von Bedürfnissen durch Ersatzhandlungen [The relaxation of needs through substitutive acts]. *Psychologische Forschung*, 18, 218–250.
- Liu, T. J., & Steele, C. M. (1986). Attribution as self-affirmation. *Journal of Personality and Social Psychology*, 51, 531–540.
- Macrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology*, 67, 808–817.
- Mahler, V. (1933). Ersatzhandlungen verschiedenen Realitätsgrades [Substitutive acts with different degrees of reality]. *Psychologische Forschung*, 18, 26–89.
- Marrow, A. J. (1938). Goal tension and recall. *Journal of General Psychology*, 19, 3–64.
- Martin, L. L., & Tesser, A. (1989). Toward a motivational and structural theory of ruminative thought. In J. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 306–326). New York: Guilford Press.
- Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. In R. S. Wyer (Ed.), *Advances in social cognition* (Vol. 9, pp. 1–47). Hillsdale, NJ: Erlbaum.
- Mathews, A., & MacLeod, C. (1985). Selective processing of threat cues in anxiety states. *Behavioral Research and Therapy*, 23, 563–569.
- McIntosh, W. D., & Martin, L. L. (1992). The cybernetics of happiness: The relation between goal attainment, rumination, and affect. In M. S. Clark (Ed.), *Review of personality and social psychology* (Vol. 14, pp. 222–246). Newbury Park, CA: Sage.
- Mikulincer, M. (1989). Cognitive interference and learned helplessness: The effects of off-task cognitions on performance following unsolvable problems. *Journal of Personality and Social Psychology*, 57, 129–135.
- Neely, J. H. (1977). Semantic priming and retrieval from lexical memory: Roles of inhibitionless spreading activation and limited capacity attention. *Journal of Experimental Psychology: General*, 1, 226–254.
- Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin*, 101, 259–282.
- Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: The 1989 Loma Prieta earthquake. *Journal of Personality and Social Psychology*, 61, 115–121.
- Nuttin, J. M., Jr. (1985). Narcissism beyond gestalt and awareness: The name letter effect. *European Journal of Social Psychology*, 15, 353–361.
- Nuttin, J. M. (1987). Affective consequences of mere ownership: The name letter effect in twelve European languages. *European Journal of Social Psychology*, 17, 381–402.
- Pollack, I. (1970). A nonparametric procedure for evaluation of true and false positives. *Behavior Research Methods and Instrumentation*, 2, 155–156.
- Pollack, I., & Norman, D. A. (1964). A non-parametric analysis of recognition experiments. *Psychometric Science*, 1, 125–126.
- Pyszczynski, T., & Greenberg, J. (1987). Self-regulatory perseveration and the depressive self-focusing style: A self-awareness theory of reactive depression. *Psychological Bulletin*, 102, 122–138.
- Pyszczynski, T., Greenberg, J., & Holt, K. (1985). Maintaining consistency between self-serving beliefs and available data: A bias in information evaluation. *Personality and Social Psychology Bulletin*, 11, 179–190.
- Schwarz, N., & Bohner, G. (1996). Feelings and their motivational implications: Moods and the action sequence. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action* (pp. 119–145). New York: Guilford Press.
- Simon, L., Greenberg, J., & Brehm, J. (1995). Trivialization: The forgotten mode of dissonance reduction. *Journal of Personality and Social Psychology*, 68, 247–260.
- Strull, T. K., & Wyer, R. S. (1986). The role of chronic and temporary goals in social information processing. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition* (pp. 503–549). New York: Guilford Press.
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261–302). New York: Academic Press.
- Steele, C. M., & Liu, T. J. (1983). Dissonance processes as self-affirmation. *Journal of Personality and Social Psychology*, 45, 5–19.
- Steele, C. M., Spencer, S. J., & Lynch, M. (1993). Self-image and dissonance: The role of affirmational resources. *Journal of Personality and Social Psychology*, 64, 885–896.
- Stone, J., Wiegand, A. W., Cooper, J., & Aronson, E. (1997). When exemplification fails: Hypocrisy and the motive for self-integrity. *Journal of Personality and Social Psychology*, 72, 54–65.
- Taylor, S. E., & Schneider, S. K. (1989). Coping and the simulation of events. *Social Cognition*, 7, 174–194.

- Tesser, A., & Cornell, D. P. (1991). On the confluence of self processes. *Journal of Experimental Social Psychology*, 27, 501-526.
- Tesser, A., Martin, L. L., & Cornell, D. P. (1996). On the substitutability of self-protective mechanisms. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action* (pp. 48-68). New York: Guilford Press.
- Tesser, A., Pilkington, C., & McIntosh, W. (1989). Self-evaluation maintenance and the mediational role of emotion: The perception of friends and strangers. *Journal of Personality and Social Psychology*, 57, 442-456.
- Uleman, J. S., & Moskowitz, G. B. (1994). Unintended effects of goals on unintended inferences. *Journal of Personality and Social Psychology*, 66, 490-501.
- Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? *Psychological Review*, 94, 3-15.
- Wegner, D. M. (1989). *White bears and other unwanted thoughts*. London: Guilford Press.
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Bulletin*, 101, 34-52.
- Wegner, D. M., & Gold, D. B. (1995). Fanning old flames: Emotional and cognitive effects of suppressing thoughts of a past relationship. *Journal of Personality and Social Psychology*, 68, 782-792.
- Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, 53, 5-13.
- Wenzlaff, R. M., Wegner, D. M., & Klein, S. B. (1991). The role of thought suppression in the bonding of thought and mood. *Journal of Personality and Social Psychology*, 60, 500-508.
- Wenzlaff, R. M., Wegner, D. M., & Roper, D. W. (1988). Depression and mental control: The resurgence of unwanted negative thoughts. *Journal of Personality and Social Psychology*, 55, 882-892.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self-completion*. Hillsdale, NJ: Erlbaum.
- Wortman, C. B., & Brehm, J. W. (1975). Responses to uncontrollable outcomes: An integration of reactance and the learned helplessness model. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 8, pp. 277-336). New York: Academic Press.
- Wyer, R. S., & Frey, D. (1983). The effects of feedback about self and others on recall and judgments of feedback-relevant information. *Journal of Experimental Social Psychology*, 19, 540-559.
- Zeigarnik, B. (1927). Über das Behalten von erledigten und unerledigten Handlungen [On the memory for completed and uncompleted actions]. *Psychologische Forschung*, 9, 1-85.

Received May 5, 1998

Revision received October 14, 1998

Accepted November 9, 1998 ■



AMERICAN PSYCHOLOGICAL ASSOCIATION SUBSCRIPTION CLAIMS INFORMATION

Today's Date: _____

We provide this form to assist members, institutions, and nonmember individuals with any subscription problems. With the appropriate information we can begin a resolution. If you use the services of an agent, please do **NOT** duplicate claims through them and directly to us. **PLEASE PRINT CLEARLY AND IN INK IF POSSIBLE.**

PRINT FULL NAME OR KEY NAME OF INSTITUTION _____

MEMBER OR CUSTOMER NUMBER (MAY BE FOUND ON ANY PAST ISSUE LABEL) _____

ADDRESS _____

DATE YOUR ORDER WAS MAILED (OR PHONED) _____

CITY _____

STATE/COUNTRY _____

ZIP _____

____ PREPAID ____ CHECK ____ CHARGE

CHECK/CARD CLEARED DATE: _____

YOUR NAME AND PHONE NUMBER _____

(If possible, send a copy, front and back, of your cancelled check to help us in our research of your claim.)

ISSUES: ____ MISSING ____ DAMAGED

TITLE _____

VOLUME OR YEAR _____

NUMBER OR MONTH _____

Thank you. Once a claim is received and resolved, delivery of replacement issues routinely takes 4-6 weeks.

(TO BE FILLED OUT BY APA STAFF)

DATE RECEIVED: _____ DATE OF ACTION: _____
ACTION TAKEN: _____ INV. NO. & DATE: _____
STAFF NAME: _____ LABEL NO. & DATE: _____

Send this form to APA Subscription Claims, 750 First Street, NE, Washington, DC 20002-4242

PLEASE DO NOT REMOVE. A PHOTOCOPY MAY BE USED.