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CHAPTER 15

CONTROL MOTIVATION, DEPRESSION, AND COUNTERFACTUAL THOUGHT

KEITH D. MARKMAN AND GIFFORD WEARY

INTRODUCTION

The notion that there exists a fundamental need to exert control over or to influence one's environment has enjoyed a long history in psychology (e.g., DeCharms, 1968; Heider, 1958) and has stimulated considerable theoretical work. Such a need has been characterized by theorists at multiple levels of analysis. Control motivation, for example, has been characterized broadly in terms of proactive (White, 1959) or reactive (e.g., Abramson, Seligman, & Teasdale, 1978; Brehm, 1966; Brehm & Brehm, 1981) strivings for control over general or specific (Brehm & Brehm, 1981) and central or peripheral outcomes (Thompson, 1993). Additionally, various types of control strategies used to gain or maintain a sense of personal control have been proposed (e.g., Averill, 1973; Heckhausen & Schulz, 1995; Rothbaum, Weisz, & Snyder, 1982; Thompson, 1981). Modes of control, for instance, have been categorized as either primary or second-

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dary. Primary strategies involve direct action undertaken to produce desirable and avoid undesirable outcomes in the external world, whereas secondary strategies employ primarily cognitive processes undertaken to produce a change within the person. Recently, Heckhausen and Schulz (1995) have further delineated these primary and secondary forms of control according to whether they are based on veridical or illusory causal understandings of the world and whether they are functional or dysfunctional. While most control theorists view primary control as preferable to secondary control, the latter is viewed as critical in the process of adaptation to control failures and in the promotion of future primary control attempts.

However conceptualized and achieved, there can be little doubt that a need for control plays a critical role in a variety of motivational, behavioral, and emotional processes (Weary, Gleicher, & Marsh, 1993). Threats to or decrements in individuals' beliefs that they can achieve desired outcomes have been associated with psychological reactance, motivational impairments, adaptive and maladaptive coping behaviors, depressed and anxious affect, metacognitive feelings of causal uncertainty, and immunological responses to stress.

In this chapter, we focus on a particular consequence of generalized control concerns for a secondary control strategy. More specifically, we examine the role of chronic control concerns in individuals' attempts to render their social environments more understandable, predictable, and controllable. Because chronic control concerns and resultant levels of chronic, heightened control motivation have been shown to be associated with mild and moderate levels of depressive symptomatology, we examine the sense-making activities of individuals suffering from subclinical levels of depression.

While other investigators have examined the attributional inferences that relatively depressed and nondepressed individuals typically employ in their quest for enhanced understanding, prediction, and control, here we focus on an alternative cognitive process. Specifically, in two studies we focus on the manner in which relatively depressed and nondepressed people mentally "undo" or engage in counterfactual thinking (Kahneman & Tversky, 1982) about a past negative event. We will argue that the control concerns characteristic of depressed individuals are important determinants of the content of their counterfactual thoughts. We also will present evidence suggesting that these counterfactuals have important implications for the retrospective control perceptions, of and control restoration behaviors likely to be employed by, depressed individuals. At the same time, however, we will suggest that negative affect and self-blame can be the undesirable by-products of cognitions directed toward the attainment and reestablishment of control perceptions.

Over the past fifteen years or so, we have been increasingly interested in exploring the role of control in cognitive processes (for a recent review, see Weary, 1994). Much of this work has consisted of examining the structural elements theorized (e.g., Abramson, Seligman, & Teasdale, 1978; Beck, 1990; Beck, 1996) to be critical antecedents of depression: genetic schemata and attributional causal elements on subsequent emotional and behavioral processes. Of particular importance for this work has been the role of depressed and nondepressed individuals' expectations of response-outcome contingencies and causal inferences. We will now turn to two lines of work that have addressed these issues.

The first line of work focusing on control expectations concerns depressed individuals' causal attributions for their behavior. Depressed individuals tend to be less consistency in the attribution of behavior to individuals for their positive outcomes. Depressed individuals also demonstrated consistent patterns of their attributions to internal, unstable, and uncontrollable factors (e.g., mood states). Depressed individuals tend to implicate internal, stable, and uncontrollable factors (e.g., native abilities) as causes of their negative experiences (see Anderson, 1985; Sweeney, Andrews, & Edwards, 1994). These attributional patterns for depressed perceivers correspond to the conceptualization of psychological self-blame attributions (e.g., Beck, 1996) and recently refined by Anderson, Markman, & Weary (1994).

The second body of relevant research concerns the role of psychopathology theory and research on control-deprivation models (Pittman & D'Agostino, 1985; Pittman & D'Agostino, 1985). The motivational functions of mild to moderate control deprivation in depressives' social interactions.

Perhaps a major example of this work is the work of Weary and Edwards (1993; Weary, Marsh, Gleicher, & Edwards, 1993; Weary, Edwards, & Weary, 1994) who developed a model of the social-cognitive

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Over the past fifteen years or so, researchers have become increasingly interested in exploring the impact of depression on various social cognitive processes (for a recent review, see Weary & Edwards, 1994). Much of this work has consisted of demonstrations of the existence of the structural elements theorized (e.g., Abramson, Metalsky, & Alloy, 1989; Abramson, Seligman, & Teasdale, 1978; Alloy, Kelly, Mineka, & Clements, 1990; Beck, 1976) to be critical antecedents of depression (e.g., depressogenic schemata and attributional control styles) and the influence of these elements on subsequent emotional, motivational, and cognitive processes. Of particular importance for this chapter is research that has examined the role of depressed and nondepressed perceivers' stylized expectations of response-outcome contingency on the content of their social inferences. We will now turn our attention to a brief examination of two lines of work that have addressed such issues.

The first line of work focusing on the inferential effects of generalized control expectations concerns depressed and nondepressed perceivers' causal attributions for their behavioral outcomes. Although there appears to be less consistency in the attributions of nondepressed and depressed individuals for their positive outcomes, numerous studies have demonstrated consistent patterns of their self-attributions for negative outcomes. Nondepressed individuals tend to ascribe their negative outcomes to internal, unstable, and controllable factors (e.g., modifiable behavioral strategies, mood states). Depressed individuals, on the other hand, tend to implicate internal, stable, and uncontrollable factors (e.g., character, dispositions, native abilities) as causes of their negative outcomes (for reviews see Anderson, 1985; Sweeney, Anderson, & Bailey, 1986; Weary & Edwards, 1994). These attributional patterns of nondepressed and depressed perceivers correspond to the conceptualizations of behavioral and characterological self-blame attributions first identified by Janoff-Bulman (1979) and recently refined by Anderson, Miller, Riger, Dill, and Sedikides (1994).

The second body of relevant research has developed in parallel to the psychopathology theory and research discussed above. This work, based more on control-deprivation models of social information processing (Pittman & D'Agostino, 1985; Pittman, 1993), stresses the potentially positive motivational functions of mild and moderate expectations of uncontrollability in depressives' social inference processes.

Perhaps a major example of this approach to depression and social perception is the work of Weary and her colleagues (for reviews see Weary, Marsh, Gleicher, & Edwards, 1993; Weary & Gannon, 1996). They have developed a model of the social-cognitive consequences of the chronic con-

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control concerns known to characterize depressed perceivers (Garber, Miller, & Seaman, 1979; Warren & McEachren, 1983; Weary, Elbin, & Hill, 1987; Weisz, Weiss, Wasserman, & Rintoul, 1987). Briefly, their model posits that mild and moderate perceptions and expectations of control loss associated with mild and moderate levels of depression engender feelings of uncertainty about one's ability to understand causal relations in the social world; often these feelings are thought to motivate depressed individuals to (1) selectively attend to information that might reasonably render their social environments more understandable, predictable, and controllable and (2) process the available social information more extensively in an effort to restore interpretive and predictive control (Rothbaum et al., 1982).

A number of studies have provided support for this model. Of most relevance here are studies that have demonstrated an enhanced sensitivity to control-relevant features of the social environment. In this regard, research has indicated that, compared to nondepressives, individuals experiencing moderate levels of depressive symptomatology are more interested in and use more information about the potential causes of their outcomes (Marsh & Weary, 1989), and are more responsive to social comparison feedback (Weary et al., 1987), negative or unexpected events (Gleicher & Weary, 1991; Weary, Jordan, & Hill, 1985), and particularly diagnostic social information (Edwards & Weary, 1993; Hildebrand-Saints & Weary, 1989). Moreover, at least two studies have provided some evidence that depressives' greater sensitivity to such types of social information result from their generalized expectations of control loss (Edwards & Weary, 1993; Yost & Weary, 1996).

In the present set of studies, we set out to document the underlying role of depressives' chronic control beliefs on their counterfactual thought processes. In particular, we examine the influence of depression-related control beliefs on the generation of counterfactuals that focus on controllable relative to uncontrollable features of a past event. We also examine how such thought might alter a sense of retrospective control (Thompson, 1981). Although the work we reviewed by Weary and her colleagues assumes that a differential sensitivity to control-relevant social information in certain situations is in the service of control restoration, their research has not documented actual increases in perceived control.

COUNTERFACTUALS AND CONTROL

The phenomenon of counterfactual or "if only..." thinking (e.g., "If only I had taken a different exit, I wouldn't be caught in this traffic jam") has generated a great deal of research interest in recent years (see Miller, Turnbull, & McFarland, 1990; Roese & Olson, 1995b, for reviews). Coun-

terfactuals are often conditional (e.g., taking a different exit) traffic jam). Once in mind, these have been shown to influence a wide range of attributions of causality (Wells & C (Miller & McFarland, 1986), susceptibility (1989), and regret (Gilovich & Me-

Researchers recently have explored the functional implications of counterfactuals (Markman, 1990; Markman, Gavanski, Sherman, & et al., 1995; Roese, 1994; Roese & Olson, 1995). For instance, Markman et al. (1993) analyzed the difference between *upward* ("it could have been better") and *downward* ("it could have been worse") counterfactuals. They obtained empirical evidence suggesting that upward counterfactuals prepare one for the future, whereas downward counterfactuals lead to positive affect.

The results of several recent studies have demonstrated an empirical relationship between counterfactual thought. Giroto, Legrenzi, and Rinaldi (1995) presented a scenario in which the protagonist experienced a controllable event. The counterfactuals part of the study focused on controllable rather than uncontrollable antecedents of the event (N'Gbala & Branscombe, 1995, for a review). Markman, Gavanski, Sherman, & et al. (1995) found that participants were more likely to make upward counterfactuals about uncontrollable antecedents of the event. Markman et al. (1995), people make downward counterfactuals about aspects of events in an effort to instill a sense of control over future outcomes.

Recent work by Roese and Olson (1995) has shown that the direction of counterfactuals can influence the direction of participants in their study made in a similar situation. Participants placed in a controllable situation made more upward counterfactuals about the same situation. These authors reasoned that these counterfactuals serve a preparative function, and are more likely in situations where the opportunity for

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The results of these studies, as one determinant of the types of

ressed perceivers (Garber, Miller, 1983; Weary, Elbin, & Hill, 1987; 7). Briefly, their model posits that citations of control loss associated with depression engender feelings of uncertainty and causal relations in the social world that motivate depressed individuals that might reasonably render their behavior predictable, and controllable information more extensively in an effort to restore control (Rothbaum et al., 1982).

and support for this model. Of most interest, a study by Markman et al. (1993) demonstrated an enhanced sensitivity to counterfactual information in a laboratory environment. In this regard, research by Rothbaum and Weary (1985) and by Rothbaum, Weary, and Sherman (1987) found that depressed individuals, and particularly depressed individuals with a history of depression, are more likely to generate counterfactuals about the potential causes of their depression than are nondepressed individuals. They are more responsive to social comparisons and to unexpected events (Gleitman & Hill, 1985), and particularly to counterfactuals (Markman & Weary, 1993; Hildebrand-Saints et al., 1993). These studies have provided some evidence to such types of social information processing as a result of control loss (Edwards & Weary, 1995).

AND CONTROL

It is important to document the underlying processes on their counterfactual thought and the influence of depression-related information on counterfactuals that focus on controllable aspects of a past event. We also examine the influence of counterfactuals on retrospective control (Thompson, 1993) and on control restoration, their research by Weary and her colleagues as a function of perceived control.

Counterfactuals are often conditional statements, containing both an antecedent (e.g., taking a different exit) and a consequent (e.g., not being in a traffic jam). Once in mind, these alternative versions of past events have been shown to influence a wide range of social judgments, including attributions of causality (Wells & Gavanski, 1989), victim compensation (Miller & McFarland, 1986), suspicion (Miller, Turnbull, & McFarland, 1989), and regret (Gilovich & Medvec, 1995; Landman, 1987).

Researchers recently have begun to explore the motivational and functional implications of counterfactual thought (e.g., Johnson & Sherman, 1990; Markman, Gavanski, Sherman, & McMullen, 1993; McMullen et al., 1995; Roese, 1994; Roese & Olson, 1995c; Taylor & Pham, 1996). For instance, Markman et al. (1993) and Roese (1994) have drawn a distinction between *upward* ("it could have been better") counterfactuals and *downward* ("it could have been worse") counterfactuals. They also have obtained empirical evidence suggesting that upward counterfactuals can prepare one for the future, whereas downward counterfactuals can engender positive affect.

The results of several recent studies have provided some support for an empirical relationship between control motivation and counterfactual thought. Girotto, Legrenzi, and Rizzo (1991) presented participants with a scenario in which the protagonists' drive home is interrupted by several events. The counterfactuals participants generated tended to focus on controllable rather than uncontrollable aspects of the scenario (see also N'Gbala & Branscombe, 1995, for a replication of this effect). Similarly, Markman, Gavanski, Sherman, and McMullen (1995) found that participants were more likely to make counterfactuals about controllable than uncontrollable antecedents of their performance outcomes. According to Markman et al. (1995), people may focus attention on the controllable aspects of events in an effort to instill feelings of control over both past and future outcomes.

Recent work by Roese and Olson (1995a) also has found that controllability can influence the *direction* of counterfactual comparison. Specifically, participants in their study made more upward counterfactuals about a story character placed in a controllable situation, but made more downward counterfactuals about the same story character placed in an uncontrollable situation. These authors reasoned that upward counterfactuals, because they serve a preparative function, are more relevant in controllable circumstances where the opportunity for future improvement is a possibility.

DEPRESSION

The results of these studies, then, have established perceived control as one determinant of the types of counterfactuals people generate. As op-

posed to these studies that examined counterfactual generation in situations where control perceptions were manipulated or temporarily aroused, the work we will be discussing here focuses on how *chronic* control perceptions influence the nature of counterfactual thought. Just as chronic perceptions of control loss motivate depressives to attend more to control-relevant features of social situations (Weary, Marsh, Gleicher, & Edwards, 1993), we also expect that depressed individuals will be more likely than nondepressed individuals to make counterfactuals about controllable aspects of life events in an effort to restore perceived control. In other words, we suggest that when individuals reflect back on "what could have been different" about a negative life event, the depressed individual is more likely than the nondepressed individual to focus on a controllable aspect of that event because of the former's greater need to minimize control losses and maintain and possibly expand future levels of primary control.¹ An important implication, then, is that the relationship between depression and controllable counterfactuals should be mediated or driven by generalized perceptions of control loss. A second implication is that making counterfactuals about controllable aspects of events should be more likely to enhance the sense that one "could have" controlled an event in the past (cf. Thompson, 1981) than making counterfactuals about uncontrollable aspects.

EVENT REPEATABILITY

A potential moderator of the effects of control motivation on counterfactual thinking, as well as the effects of counterfactual thinking on perceived control, is whether one believes that the event in question might happen again in the future. In a relevant study, Markman et al. (1993) found that a potentially repeatable event was more likely to engender upward counterfactual thought than a nonrepeatable event. According to these researchers, a potentially repeatable event presents one with the opportunity to improve upon the outcome in the future, and should, therefore, stimulate the generation of upward counterfactuals. On the other hand, nonrepeatable events should not engender as many upward counterfactuals because preparation for the future is largely irrelevant.²

Because the potential repeatability of an event presents one with the opportunity for future improvement, we also suggest that a repeatable event affords individuals with the opportunity to satisfy their control motivations. That is, it is functional to think about how one could have controlled a repeatable event in the past because it suggests that one might be better able to control things in the future. On the other hand, because the opportunity to exercise control over the future is largely irrelevant for nonrepeatable events, it is perhaps less functional to think about how one

could have controlled such an event (1983).

These notions, in turn, allow us to explore how event repeatability might moderate the effects of control motivation on perceived control in depressed and nondepressed individuals exposed to negative life events. Earlier, we suggested that depressed individuals are more likely than nondepressives to focus on controllable aspects when thinking about negative life events. This relationship should be mediated by generalized perceptions of control loss. However, we also suggest that the effects of control motivation on perceived control will only be seen in the case where control is a possibility. Because the possibility of control does not exist for nonrepeatable events, control motivation should not mediate the effects of control motivation on perceived control in such cases. In other words, even if an individual scores high on the Beck Depression Inventory (BDI) components *other* than control concern, control motivation on controllable aspects, the effects of control motivation on perceived control for nonrepeatable events should be less likely. Third, because only controllable aspects should be likely to engender counterfactuals, control motivation should be likely to engender counterfactuals about controllable but not for nonrepeatable events.

DEPRESSION AND COUNTERFACTUAL THINKING ABOUT LIFE EVENTS

We conducted our first study to explore these issues with the following goals in mind: (1) To examine differences in counterfactual thinking between depressed and nondepressed individuals in the types of negative life events; (2) to examine whether the relationship between depression and counterfactuals is moderated by event repeatability; (3) to examine whether the relationship between depression and counterfactuals is moderated by event repeatability. To explore these issues, we developed a study that allowed us to examine counterfactuals about controllable and uncontrollable events.

Participants in the study were psychology students at Ohio State University. From this initial pool, a random sample of 100 students with scores of 9 or above on the BDI were selected.

counterfactual generation in situations where manipulated or temporarily altered here focuses on how *chronic* control of counterfactual thought. Just as motivate depressives to attend more to situations (Weary, Marsh, Gleicher, & depressed individuals will be more to make counterfactuals about control to restore perceived control. In individuals reflect back on "what negative life event, the depressed individual to focus on a consequence of the former's greater need to and possibly expand future levels of motivation, then, is that the relationship of counterfactuals should be mediated of control loss. A second implication of controllable aspects of events should that one "could have" controlled an than making counterfactuals about

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effects of control motivation on consequences of counterfactual thinking on perceptions that the event in question might have occurred in a relevant study, Markman et al. (1993) found that an event was more likely to engender upward counterfactuals for a nonrepeatable event. According to the literature, a controllable event presents one with the opportunity to act in the future, and should, therefore, engender upward counterfactuals. On the other hand, an uncontrollable event engenders as many upward counterfactuals as downward counterfactuals because the future is largely irrelevant.² If an event presents one with the opportunity to act, we also suggest that a repeatable event provides an opportunity to satisfy their control motivation about how one could have controlled the event because it suggests that one might be able to control the event in the future. On the other hand, because the future is largely irrelevant for an uncontrollable event, it is less functional to think about how one

could have controlled such an event in the past (cf. Silver, Boon, & Stones, 1983).

These notions, in turn, allow us to generate hypotheses regarding how event repeatability might moderate the manner in which depressed and nondepressed individuals engage in counterfactual thinking about negative life events. Earlier, we suggested that depressives may be more likely than nondepressives to focus on controllable aspects when engaging in counterfactual thinking and, furthermore, that this relationship should be mediated by generalized control loss perceptions. At this point, however, we also suggest that the mediating effects of control loss perceptions will only be seen in the case of repeatable events, where future control is a possibility. Because the opportunity for future control does not exist for nonrepeatable events, on the other hand, control loss perceptions should not mediate the effects of depression on counterfactual generation in such cases. In other words, even if depression, at least as measured by the Beck Depression Inventory (BDI; Beck, 1967), includes symptom components *other* than control concerns that might also lead to a relative focus on controllable aspects, the effects of depression on counterfactual generation for nonrepeatable events should not be mediated by control loss perceptions.³ Second, because only repeatable events present individuals with future opportunities to reexert control, a tendency to mutate controllable aspects should be likely to enhance control perceptions for repeatable but not for nonrepeatable events.

DEPRESSION AND COUNTERFACTUALS FOR NEGATIVE LIFE EVENTS: STUDY 1

We conducted our first study (Markman & Weary, 1996) with four goals in mind: (1) To examine differences between depressed and nondepressed individuals in the types of counterfactuals they make about negative life events; (2) to examine whether control loss perceptions mediate the relationship between depression and the generation of different types of counterfactuals; (3) to examine the subsequent effects of these different types of counterfactuals on feelings of control; and (4) to examine how event repeatability might moderate all of these relationships. In order to explore these issues, we developed a relatively straightforward paradigm that allowed us to examine counterfactuals generated about real life events.

Participants in the study were selected from a pool of introductory psychology students at Ohio State University who completed the BDI. From this initial pool, a random sample of students who scored less than 6 or above 9 on the BDI were selected for participation in the experiment and

were classified as nondepressed or depressed, respectively. The final sample consisted of 60 depressed participants and 61 nondepressed participants.⁴

After being told that the study concerned "thinking about life events," participants were given the Edwards and Weary (1996) Perceptions of Control Scale (PCS) to complete. This scale is a 13-item measure of generalized perceived lack of control (i.e., higher scores indicate greater feelings of lack of control), and employs six response options (1 = "strongly disagree"; 6 = "strongly agree"). Examples of items include "I can do anything I set my mind to" and "I have little control over the bad things that happen to me." Edwards and Weary (1997) found the scale to demonstrate adequate test-retest reliability over a six-week period ($r = .58$). As evidence for the validity of the control scale, the scale was found to correlate with measures of other constructs in a manner consistent with what would be theoretically expected for a measure of generalized perceived lack of control. In the present sample, the scale demonstrated adequate internal consistency (Cronbach's $\alpha = .75$).

After completing the PCS, participants were given a packet of instructions and questions. Upon opening the packet, half of the participants—those assigned to the repeatable event condition—were given the following instructions (see also McMullen et al., 1995):

We would like you to take a moment and recall a *negative* event that has happened to you in your life. The event should have these characteristics:

1. It should be a *very negative event* (it should have made you unhappy or upset you in some way).
2. It should involve *you* (events you only heard about, for example, don't count).
3. It should have *happened recently* (within the last year or so).
4. It should be an event that could possibly *happen to you again in the future* (e.g., taking an exam).

The other half of the participants—those assigned to the nonrepeatable event condition—received the same instructions, with the exception that the event they recalled "...should be an event that will probably *not happen again in the future* (e.g., your only trip to a far away country)." All participants then were told to provide a written description of the event. Examples of events described in the repeatable event condition included "not studying hard enough and failing an exam" and "fighting with parents," whereas examples of events described in the nonrepeatable event condition included "missing a final year of high school football due to an injury" and "not spending enough time with a terminally ill relative."

After describing the event, participants thought the event was and how it happened to them on 9-point scales of precounterfactual control. Participants "vividly imagine" the event they followed the following question (see Roese &

People often have thought of things like the one that you described. List as many things that, had they been different, would have made the event you described (i.e., the event *better*).

Following this counterfactual, participants rated how much control they had over the event—this measure constituted the control scale (i.e., over the specific event that

Counterfactual statements were generated by two independent judges. Our results are consistent with the way attribution is made on the controllability dimension (e.g., Wortman, 1977; Weiner, 1986). The counterfactual focused on an event that the judge, "could have been controlled by the actor at that time," and was categorized as controllable. On the other hand, the counterfactual focused on an event that was not controllable. Thus, counterfactuals that focused on an event that was controllable (e.g., "If only I had studied harder") are categorized as controllable, whereas counterfactuals that focused on an event that was not controllable (e.g., "If only it hadn't been raining...") are categorized as uncontrollable. (Tangney, & Gavanski, 1994)

COUNT

Our prediction was that depressed individuals would mutate relatively high levels of perceived control over the events they described. We expected a significant interaction between level of depression and level of controllability. In order to test this prediction, we conducted a 2 (Event Type: repeatable vs. nonrepeatable) \times 2 (Event Type: controllable vs. uncontrollable) ANOVA.

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After describing the event, participants indicated how negative they thought the event was and how much control they felt they had over what happened to them on 9-point scales—the latter measure constituted an index of precounterfactual control. Participants then were told to once again "vividly imagine" the event they had described and then respond to the following question (see Roese & Olson, 1993):

People often have thoughts like "if only" or "what if" after experiences like the one that you described. In the space below, please list any things that, had they been different, could have changed the outcome of the event you described (i.e., that could have made the outcome of the event *better*). List as many things as come to mind.

Following this counterfactual-listing task, participants once again rated how much control they felt they had over what happened to them—this measure constituted an index of postcounterfactual control (i.e., over the specific event that they recalled).

Counterfactual statements derived from the listing task were coded by two independent judges. Our coding scheme was designed to be consistent with the way attribution theorists previously have conceptualized the controllability dimension (e.g., Anderson & Deuser, 1993; Bulman & Wortman, 1977; Weiner, 1986). The general guideline for coding was that if the counterfactual focused on an aspect of the event that, in the opinion of the judge, "could have been controlled by the actor at that time," it should be categorized as controllable. On the other hand, if the judge deemed that the counterfactual focused on an aspect that "could not have been controlled by the actor at that time," it should be categorized as uncontrollable. Thus, counterfactuals that focused on specific behaviors or failures to act (e.g., "If only I had studied harder...") or transient qualities of the self (e.g., "If only I had been paying more attention...") were coded as controllable, whereas counterfactuals that focused on chronic and enduring aspects of the self (e.g., "If only I wasn't so stupid...") or external forces (e.g., "If only it hadn't been raining...") were coded as uncontrollable (Niedenthal, Tangney, & Gavanski, 1994).⁵

COUNTERFACTUALS

Our prediction was that depressed compared to nondepressed individuals would mutate relatively more controllable than uncontrollable aspects of the events they described. Thus, we predicted a two-way interaction between level of depression and the type of counterfactual generated. In order to test this prediction, we initially performed a 2 (Depression) \times 2 (Event Type: repeatable vs. nonrepeatable) \times 2 (Counterfactual Type: controllable vs. uncontrollable) analysis of variance (ANOVA),

Table 1. Study 1: Number of Controllable and Uncontrollable Aspects Mutated

| Depression | Counterfactual type: Controllable | Counterfactual type: Uncontrollable |
|----------------------------------|--------------------------------------|--|
| Nondepressed | | |
| Repeatable event ($n = 28$) | 1.64 | 1.50 |
| Nonrepeatable event ($n = 33$) | 1.64 | 1.48 |
| Depressed | | |
| Repeatable event ($n = 32$) | 2.75 | 1.22 |
| Nonrepeatable event ($n = 28$) | 2.18 | 0.79 |

with counterfactual type serving as a within-subjects variable. Table 1 shows the number of each type of counterfactual generated by participants in all conditions.⁶

According to the analysis, the predicted Depression \times Counterfactual Type interaction was obtained ($p = .006$). Planned comparisons of the means involved in this interaction revealed that depressed participants mutated more controllable aspects ($M = 2.48$) than did nondepressed participants ($M = 1.64$), but they did not differ from nondepressed participants in terms of the number of uncontrollable aspects mutated ($M_s = 1.02$ and 1.49 , respectively). Furthermore, it appeared that only depressed participants mutated more controllable than uncontrollable aspects; nondepressed participants showed no preference for either type of counterfactual. The Depression \times Event Type \times Counterfactual Type interaction was not significant.

RELATIONSHIPS BETWEEN DEPRESSION, COUNTERFACTUAL THINKING, AND PERCEIVED CONTROL

Earlier, we predicted that event repeatability would moderate some of the relationships between depression, counterfactual thinking, and the measures of generalized and specific control perceptions. Consequently, we performed separate regression analyses on the repeatable and nonrepeatable event subsamples. For all path models, we decided that it was important to focus on the number of controllable aspects mutated *relative* to the number of uncontrollable aspects mutated (controllable counterfactual thought index—CCT). We reasoned that while mutating controllable aspects should enhance perceived control, mutating uncontrollable aspects should, if anything, *decrease* perceived control, as the latter is a particularly undesirable goal for depressed individuals. A difference score, therefore, was computed by subtracting the number of uncontrollable aspect mutations coded from the number of controllable aspect mutations coded for each judge. The difference scores from both judges then were averaged for each participant, and this average difference score constituted

an index of participants' relative to controllable aspects.

According to our a priori expectations (higher scores on the PCS indicate higher perceived control) should statistically account for depression (dummy coded as "0" for controllable counterfactual thought condition). Additionally, we predicted that both repeatable and nonrepeatable counterfactual control would predict an event should make controllable than uncontrollable aspects (Kawachi, 1995). In turn, mutating more controllable should be associated with increased perceived control (i.e., increases from pre- to postcounterfactual event condition; controllable counterfactual thought condition). Improvement in perceived control is largely irrelevant

Repeatable Event Condition

A major hypothesis, then, was that perceived control would mediate the relationship between counterfactual type for potentially repeatable events. In addition, we hypothesized that, for the repeatable event hypothesis, we employed the procedure of Baron and Kenny (1986) for testing mediation.⁷ An analysis of variance revealed that depression was significantly related to perceived control. Next, an analysis involving the interaction between depression and event type revealed that depressed compared to nondepressed participants mutated more controllable than uncontrollable aspects. The third step involved a simultaneous analysis of the relationship between depression and CCT. Importantly, and as predicted, depression was significantly related to CCT ($p = .02$), whereas the relationship between depression and perceived control was not significant ($p > .20$). This analysis suggests that perceived control perceptions are the component that mediates the relationship between individuals to mutate more controllable than uncontrollable events.

The second major hypothesis was that the relationship between depression and perceived control would be stronger in the repeatable event condition than in the nonrepeatable event condition. More controllable than uncontrollable counterfactuals (postcounterfactual) control would predict perceived control beyond the influence of precounterfactual

Uncontrollable Aspects Mutated

| Actual type: Controllable | Counterfactual type: Uncontrollable |
|------------------------------|--|
| 0.4 | 1.50 |
| 0.4 | 1.48 |
| 0.5 | 1.22 |
| 0.8 | 0.79 |

within-subjects variable. Table 1
counterfactual generated by partici-

dicted Depression \times Counterfac-
(0.06). Planned comparisons of the
indicated that depressed participants
(2.48) than did nondepressed partici-
differ from nondepressed partici-
controllable aspects mutated ($M_s = 1.02$
appeared that only depressed partici-
on uncontrollable aspects; nonde-
reference for either type of
type \times Counterfactual Type inter-

COUNTERFACTUAL THINKING,
CONTROL

repeatability would moderate some
counterfactual thinking, and the
control perceptions. Consequently,
scores on the repeatable and nonre-
peatable models, we decided that it was im-
possible to mutate *relative* to
mutated (controllable counterfac-
tual) while mutating controllable
control, mutating uncontrollable as-
pects, as the latter is a par-
tial control. A difference score,
the number of uncontrollable as-
pects of controllable aspect mutations
from both judges then were av-
erage difference score constituted

an index of participants' relative tendency to mutate controllable over un-
controllable aspects.

According to our a priori arguments, generalized control percep-
tions (higher scores on the PCS indicating greater lack of control percep-
tions) should statistically account for the relationship between level of
depression (dummy coded as "0" = nondepressed, "1" = depressed) and
controllable counterfactual thought (CCT) only in the repeatable event
condition. Additionally, we posited that specific feelings of control over
both repeatable and nonrepeatable events (i.e., greater feelings of pre-
counterfactual control) would predict CCT; greater feelings of control over
an event should make controllable aspects more available for mutation
than uncontrollable aspects (Kahneman & Miller, 1986; Markman et al.,
1995). In turn, mutating more controllable than uncontrollable aspects
should be associated with increases in feelings of control over the event
(i.e., increases from pre- to postcounterfactual control) only in the repeat-
able event condition; controllable counterfactual thought should not en-
hance control for nonrepeatable events because the opportunity for future
improvement is largely irrelevant.

Repeatable Event Condition

A major hypothesis, then, was that generalized control loss percep-
tions would mediate the relationship between depression and counterfac-
tual type for potentially repeatable events. In order to examine this
hypothesis, we employed the procedure suggested by Baron and Kenny
(1986) for testing mediation.⁷ An initial regression analysis indicated that
depression was significantly related to higher scores on the PCS ($p < .001$).
Next, an analysis involving the regression of depression on CCT found
that depressed compared to nondepressed individuals mutated relatively
more controllable than uncontrollable aspects of the events, $p = .05$. The
third step involved a simultaneous regression of depression and PCS
scores on CCT. Importantly, and as predicted, PCS scores significantly pre-
dicted CCT ($p = .02$), whereas the effect of depression on CCT became non-
significant ($p > .20$). This analysis suggests, then, that generalized control
loss perceptions are the component of depression that drives depressed in-
dividuals to mutate more controllable than uncontrollable aspects of re-
peatable events.

The second major hypothesis was that mutating more controllable
than uncontrollable aspects should enhance control perceptions, but only
in the repeatable event condition. As can be seen in Figure 1, mutating
more controllable than uncontrollable aspects did indeed enhance feel-
ings of (postcounterfactual) control over repeatable events, above and be-
yond the influence of precounterfactual control ($p = .01$).

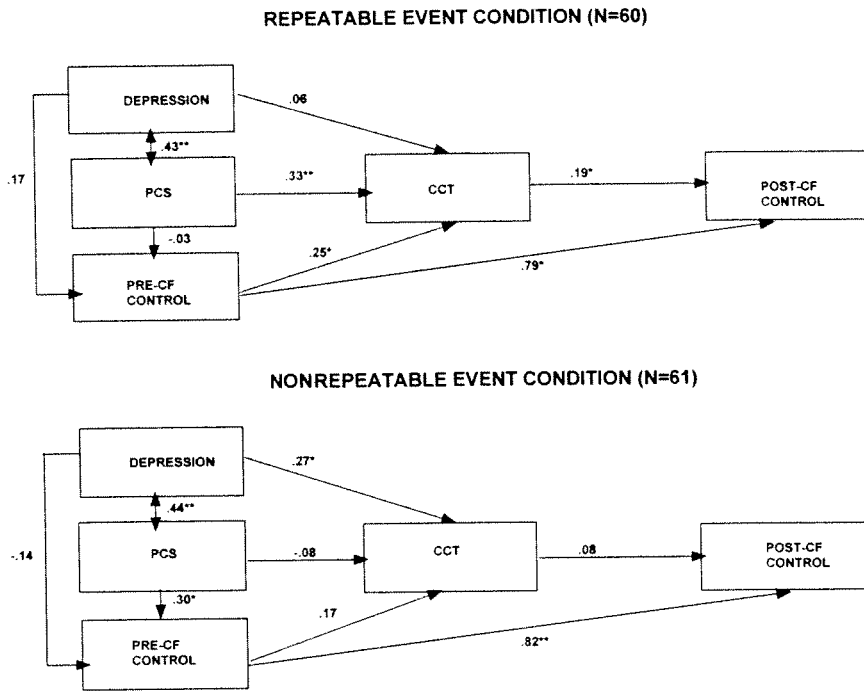


FIGURE 1 Results of the Study 1 separate path analyses for the repeatable and nonrepeatable event condition models. Path coefficients are standardized regression weights (* $p < .05$, ** $p < .01$).

Nonrepeatable Event Condition

Because the opportunity to satisfy one's control motivation should be lowered when thinking about nonrepeatable events, we predicted that generalized perceptions of control loss would not mediate the relationship between depression and counterfactual type for the nonrepeatable event subsample. An initial analysis indicated that depression predicted a relative tendency to mutate controllable over uncontrollable aspects ($p = .05$). On the other hand, and as depicted in Figure 1, participants who scored higher on the PCS did not mutate more controllable than uncontrollable aspects ($p > .50$). Thus, generalized control loss perceptions could not have mediated the relationship between depression and CCT in the nonrepeatable event condition.

Because nonrepeatable events do not present an opportunity to satisfy one's control motivation, we also predicted that participants in the

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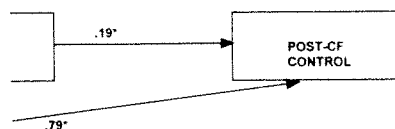
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The results of this study c
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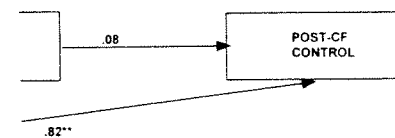
As we noted earlier, howev
 lationship between depression a
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 searchers (e.g., Niedenthal et al
 Chandler, 1982; Wicker, Payne,
 negative occurrences result fro
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 events may not present the opp
 tion, they may still lead to the
 sional controllability that enge
 depressed individuals. Driven l
 viduals may then focus on cont
 in an effort to make amends for
 strate, however, such thinking
 an event will not be repeated.

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REPEATABLE EVENT CONDITION (N=60)



NONREPEATABLE EVENT CONDITION (N=61)



Standardized regression weights ($p < .05$).

one's control motivation should mediate the relationship between depression and postcounterfactual control for the nonrepeatable event condition. That is, we predicted that depression would not mediate the relationship between counterfactual type for the nonrepeatable event condition. That is, we predicted that depression predicted a relationship between counterfactual type and postcounterfactual control for uncontrollable aspects ($p = .05$). As can be seen in Figure 1, participants who scored high on depression and perceived loss perceptions could not have perceived control and CCT in the nonrepeat-

able event condition. We predicted that participants in the

nonrepeatable event condition would not gain perceived control from mutating more controllable than uncontrollable aspects. As can be seen in Figure 1, the relationship between CCT and postcounterfactual control was nonsignificant ($p > .20$), indicating that a greater tendency to mutate controllable over uncontrollable aspects did not lead to significant increases in retrospective control over nonrepeatable events.

Finally, we should note the unexpected positive relationship between high PCS scores and precounterfactual control (see Figure 1— $p < .05$). While admittedly speculative, it may be that participants suffering from greater perceptions of lack of control attempted to compensate for these feelings by recalling events over which they felt they had more control. These participants may not have attempted to compensate by mutating relatively more controllable aspects, however, because the motivation to control such events in the future was irrelevant in this condition.

The results of this study demonstrated that when individuals engaged in counterfactual thought about negative life events, those who were mildly depressed were more likely to mutate controllable than uncontrollable aspects of those events. Moreover, this effect appeared attributable, in the repeatable event condition at least, to the control loss concerns that are known to characterize mildly depressed individuals. Finally, mutating more controllable than uncontrollable aspects led to enhanced beliefs that one had control over the event in the past, although this was more likely to be the case for potentially repeatable events.

As we noted earlier, however, there was a significant and positive relationship between depression and counterfactual type in the nonrepeatable event condition. Thus, there appear to be other aspects of depression above and beyond control concerns that can result in the mutation of more controllable than uncontrollable aspects. Although further research will be needed to determine exactly what these may be, one possibility is the feelings of guilt associated with depression. According to a number of researchers (e.g., Niedenthal et al., 1994; Weiner, 1986; Weiner, Graham, & Chandler, 1982; Wicker, Payne, & Morgan, 1983), feelings of guilt over negative occurrences result from attributions to personally controllable causes and self-responsibility. In our estimation, although nonrepeatable events may not present the opportunity to satisfy one's control motivation, they may still lead to the ascriptions of self-responsibility and personal controllability that engender the guilt so often experienced by depressed individuals. Driven by these feelings of guilt, depressed individuals may then focus on controllable relative to uncontrollable aspects in an effort to make amends for their past actions. As our results demonstrate, however, such thinking may not enhance perceived control when an event will not be repeated.

DEPRESSION AND COUNTERFACTUALS FOR NEGATIVE LIFE EVENTS: STUDY 2

Our first study demonstrated that chronic control loss concerns can be an important antecedent of the type of counterfactual generated and that counterfactuals can enhance perceptions of control over the past. For our next study, we decided to examine a potential moderator of the control function of counterfactual thought. Although recent work has suggested that individuals may engage in counterfactual thinking in order to satisfy particular goal states (e.g., Markman et al., 1993; Roese, 1994), none of this work has examined individual beliefs in the ability of counterfactuals to do so. In our view, individuals who possess such beliefs may derive more psychological benefits from counterfactual thought than individuals who do not. Thus, we suggest that idiosyncratic beliefs in the ability of particular types of counterfactuals to help bring about particular goal states may actually moderate the success of such counterfactuals in goal attainment (cf. Carver & Scheier, 1990; Weary & Edwards, 1996).

The specific goal state we chose to focus on in our second study was the need for meaning (Silver et al., 1983). Our interest in this variable stemmed from Thompson's (1981) suggestion that the underlying goal of establishing retrospective control is to satisfy a need for meaning—to understand the event. In our second study, we predicted that mutating controllable relative to uncontrollable aspects of negative events would be especially likely to enhance control perceptions to the extent that one believes in the ability of counterfactuals to provide a sense of meaning or insight into these life events. Such a finding would also begin to establish an empirical relationship between the need for meaning and perceived control.

In Study 2 (Markman & Weary, 1997), participants once again recalled negative life events and made counterfactuals about them. Because control perceptions were only enhanced in the repeatable event condition of Study 1, participants were only asked to describe potentially repeatable events. Our main goal was to demonstrate the moderating effects of beliefs in the ability of counterfactuals to provide meaning on the relationship between counterfactual generation and perceived control.

Participants, preselected on the basis of their BDI scores ($N = 64$), were given the same cover story employed in Study 1. They then received a packet of instructions and questions and were given the same set of instructions that were used in the repeatable event condition of Study 1 (i.e., to recall a very negative event that could potentially happen again). After providing a written description of the event, participants indicated, as they did in Study 1, how negative they thought the event was and how much control they felt they had over what happened to them (precounterfactual control). Participants then performed the same counterfactual-listing exercise that was used in Study 1.

After listing their counterfactuals, participants indicated how much control they felt they had over what happened to them (precounterfactual control). Finally, participants responded to the question "To what extent do you believe that you have provided yourself with a sense of meaning (a scale from 1 = not at all to 7 = to a great extent) scale. This measure assesses beliefs in the ability of counterfactuals derived from the listing exercise in the manner as before.⁸

For our primary analysis, we examined the specified interrelationships among pre- to postcounterfactual control, CCT main effect and the Meaning interaction. We predicted that Meaning will predict increases in perceived control (independently predicted) (e.g., $p = .05$). Beyond this, we predicted that Meaning will interact with CCT ($p = .04$), showing once again that the relationship between controllable over uncontrollable as perceived control ($p > .50$). Rather than a relationship between counterfactuals and perceived control (Kenny, 1986).⁹

To clarify the meaning of the interaction, we performed separate regression analyses at the median into those scoring above and below the median. We performed a similar procedure, see Andersen et al. (1997) that for participants who had relatively more controllable than uncontrollable aspects of the event, perceived control ($p < .001$). On the other hand, for participants who had relatively more uncontrollable than controllable aspects did not differ from zero. This analysis suggests that mutating controllable aspects enhances perceived control. Thus, we believe that counterfactuals that one believes that counterfactuals provide meaning or insight into these events.

IMP

The results of two studies indicate that depressed and nondepressed individuals differ in response to negative life events. Depressed individuals are more likely than nondepressed partic-

COUNTERFACTUALS FOR NEGATIVE STUDY 2

Irony control loss concerns can be a function of counterfactuals generated and beliefs of control over the past. For example, a potential moderator of the control loss concern is that enough recent work has suggested that counterfactual thinking in order to satisfy a need for control (e.g., Roese, 1993; Roese, 1994), none of this suggests that the ability of counterfactuals to increase such beliefs may derive more from a lack of thought than individuals who lack such beliefs in the ability of particular counterfactuals about particular goal states may increase counterfactuals in goal attainment (e.g., Markman, 1996).

As shown in our second study was the interest in this variable stemmed from the underlying goal of establishing a sense of meaning—to understand the relationship that mutating controllable relative to uncontrollable would be especially likely to enhance that one believes in the ability of counterfactuals to enhance meaning or insight into these life events to establish an empirical relationship between counterfactuals and perceived control.

In Study 2, participants once again rated their counterfactuals about them. Because the event was repeatable, the relationship between counterfactuals and perceived control was expected to be repeatable. In the repeatable event condition, participants described potentially repeatable events and the moderating effects of beliefs in meaning on the relationship between counterfactuals and perceived control.

Participants were given the same set of counterfactuals as in Study 1. They then received the same set of counterfactuals as in Study 1 (i.e., potentially happen again). After the event, participants indicated, as in Study 1, how they thought the event was and how they thought it happened to them (precounterfactual condition) and the same counterfactual-

After listing their counterfactuals, participants once again rated how much control they felt they had over what happened to them (post-counterfactual control). Finally, and importantly, participants responded to the question "To what extent does engaging in 'if only' thinking help provide you with a sense of 'meaning' or 'insight' into negative events that have occurred to you in the past?" on a 1 (not to any extent) to 9 (to a great extent) scale. This measure constituted an index of individual beliefs in the ability of counterfactuals to provide meaning. The counterfactuals derived from the listing exercise were later coded in the same manner as before.⁸

For our primary analysis, we proposed a regression model that specified interrelationships among CCT, beliefs in meaning, and changes in pre- to postcounterfactual control. Our major hypothesis was that the CCT main effect and the Meaning \times CCT interaction would independently predict increases in perceived control. As predicted, the Meaning \times CCT interaction independently predicted increases in pre- to postcounterfactual control ($p = .05$). Beyond this, the CCT main effect was significant as well ($p = .04$), showing once again that a relative tendency to mutate controllable over uncontrollable aspects enhances feelings of retrospective control. On the other hand, meaning, by itself, did not predict increases in perceived control ($p > .50$). Rather, it appears that meaning moderated the relationship between counterfactual type and perceived control (Baron & Kenny, 1986).⁹

To clarify the meaning of the interaction, we divided our participants at the median into those scoring high and low on beliefs in meaning and performed separate regression analyses for each set of participants (for a similar procedure, see Andersen & Schwartz, 1992). The analysis showed that for participants who had relatively high beliefs in meaning, mutating more controllable than uncontrollable aspects predicted increases in perceived control ($p < .001$). On the other hand, mutating more controllable than uncontrollable aspects did not predict increases in perceived control for participants who had relatively low beliefs in meaning ($p = .30$). Thus, this analysis suggests that mutating more controllable than uncontrollable aspects enhances perceived control over negative life events to the extent that one believes that counterfactual thinking can provide a sense of meaning or insight into these events.

IMPLICATIONS

The results of two studies reveal differences in the way moderately depressed and nondepressed individuals generate counterfactual alternatives in response to negative life events. Depressed participants were more likely than nondepressed participants to generate counterfactuals that fo-

cused on more of the controllable than uncontrollable aspects of such negative events. Moreover, mediational analyses suggested that this greater relative tendency was driven by general perceptions of control loss in the case of potentially repeatable events. The results of both studies also indicated that mutating more controllable than uncontrollable aspects was associated with increases in perceived control over repeatable events. In our view, the results of these two studies suggest the operation of a *compensatory mechanism* (cf. Thompson, 1993)—that depressed individuals may attempt to compensate for their *general* perceptions of control loss by enhancing their perceptions of control over *specific* events through counterfactual thought.

To the best of our knowledge, the current studies are the first in the published literature to document individual differences in counterfactual thinking as a function of depression. In a related series of studies, Roese and Olson (1993) focused on individual differences in counterfactual thinking and a component of depression—self-esteem. In their work, participants with either high (HSEs) or low (LSEs) self-esteem were asked to imagine themselves performing behaviors with another person that resulted in either a successful outcome or failure. The counterfactuals participants generated about these outcomes were then coded as focusing on either actions taken by the self or actions taken by the other. Relevant to the present work, the results indicated that following failure, LSEs were more likely than HSEs to mutate their *own* actions. Although Roese and Olson (1993) were concerned with self- versus other-referent counterfactuals as opposed to controllability per se, their finding that LSEs were more likely to mutate their own (controllable) actions than the actions of another (uncontrollable) is certainly consistent with our results. These authors also went on to suggest a number of potential explanations for their findings, including differences between HSEs and LSEs in terms of their self-enhancement and self-presentation needs, and differences between these two groups in terms of the relative accessibility of positive versus negative self-schematic information. In general, future research might also examine the extent to which these aspects of self-esteem moderate or mediate the relationship between depression and counterfactual thinking.

RECONCILING OUR FINDINGS WITH THOSE OF LEARNED HELPLESSNESS THEORY

The finding that depressed individuals mutated more controllable than uncontrollable aspects may seem surprising in light of Janoff-Bulman's (1979) finding that depressed individuals tend to engage in

characterological self-blame—a modifiable (and thus uncontrollable) helplessness theory (Abramson, 1985; Seligman, 1975) suggests that people attribute blame to uncontrollable factors. The findings of learned helplessness

There May Be No Contradiction

It may be that direct causal attribution is at a different level of analysis than counterfactual thinking. For example, when moderately depressed individuals engage in causal attribution, they are empowered to believe that they could not or did not have controlled it. Thus, the statement "It was my own stupidity" (a controllable counterfactual); contrasted with the former type of answer, where the individual is blamed on the latter. The depressed individual's answers as contradictory.¹⁰

Causal Attribution and Undoing

Although past research has focused on counterfactual thinking in influencing causal attribution (Wells & Gavanski, 1989), recent research has shown that distinctions can also be made between controllable and uncontrollable causes (Davis, Lehman, Silver, Wortman, & Branscombe, 1995) have suggested that where possible causes are identified, the extent to which they were necessary for the outcome, whereas counterfactuals are evaluated in terms of whether they have been undone or avoided. Empirical support for this distinction was provided by Davis et al. (1995). According to their findings, they *caused* the death, the vast majority of participants would have *avoided* if they had done so.

In turn, this distinction may help explain the large body of findings that in the present studies, participants who

characterological self-blame—a form of self-blame that focuses on uncontrollable (and thus uncontrollable) aspects of the self. Similarly, learned helplessness theory (Abramson et al., 1978; Alloy et al., 1990; Anderson, 1985; Seligman, 1975) suggests that depressed individuals will tend to ascribe blame to uncontrollable factors. We suggest three ways of reconciling the findings of learned helplessness theory with our own.

There May Be No Contradiction

It may be that direct causal questioning focuses the individual on a different level of analysis than asking "what could have been different." For example, when moderately depressed individuals make a characterological attribution, they are emphasizing that it is something about themselves that they could not or did not control, not that other people could not have controlled it. Thus, they may readily agree with both the statement "It was my own stupidity" (a characterological attribution) and the statement "If only I had done X, the event would have been avoided" (a controllable counterfactual); causal questioning focuses the individual on the former type of answer, whereas counterfactual questioning focuses the individual on the latter. The depressed individual would not see these two answers as contradictory.¹⁰

Causal Attribution and Undoing May Be Independent Processes

Although past research has implicated the role of counterfactual thinking in influencing causal ascriptions (e.g., Hilton, 1990; Lipe, 1991; Wells & Gavanski, 1989), recent theorizing has suggested that important distinctions can also be made between the two processes. For instance, Davis, Lehman, Silver, Wortman, and Ellard (1996) and N'Gbala and Branscombe (1995) have suggested that causal attribution is a process whereby possible causes are identified and evaluated with reference to the extent to which they were necessary and/or sufficient to produce a given outcome, whereas counterfactual thinking is a process whereby antecedents are evaluated in terms of the relative ease with which they could have been undone or avoided (see also Mandel and Lehman, 1996). Empirical support for this distinction comes from a study of parents who had lost a child to sudden infant death syndrome conducted by Davis et al. (1995). According to their findings, although most parents did not feel that they *caused* the death, the vast majority did feel that the death could have been *avoided* if they had done something differently.

In turn, this distinction may help us to accommodate our results with the large body of findings that support learned helplessness theory. In the present studies, participants were asked to think about "what might have

uncontrollable aspects of such analyses suggested that this general perception of control loss is more than uncontrollable aspects of control over repeatable events. These findings suggest the operation of a component—that depressed individuals have different perceptions of control loss by different specific events through coun-

terferent studies are the first in the literature to show individual differences in counterfactual thinking. In a related series of studies, we found individual differences in counterfactual thinking—self-esteem. In their work, we found that low (LSEs) self-esteem were associated with behaviors with another person that led to a negative or failure. The counterfactual outcomes were then coded as self-referent or other-referent. We indicated that following failure, individuals attributed their own actions. Although we found that self- versus other-referent counterfactual thinking per se, their finding that individuals made more (controllable) actions than the other is certainly consistent with our results. We suggest a number of potential explanations for the differences between HSEs and LSEs: differences in self-presentation needs, and differences in the relative accessibility of information. In general, future research should explore to which these aspects of self-identity are related to depression and

CONCLUSIONS FOR THOSE OF LEARNED HELPlessness THEORY

Individuals who are more controllable and who are not surprised in light of Janoff-Bulman's theory, individuals tend to engage in

been different" about the events they described. In our view, the greater control loss perceptions of our depressed compared to nondepressed participants resulted in their greater attention to controllable features of the described events. Since controllable features were by their nature avoidable, they were easier to mutate. When depressives are asked to attribute cause for a particular event, they may go through an entirely different cognitive process, i.e., one in which they evaluate the necessity and sufficiency of various possible causes. In so doing, uncontrollable antecedents may be afforded more causal weight by depressed than nondepressed individuals because they are evaluated as more necessary and/or sufficient for producing a particular outcome.

Causal Attribution versus Undoing as Passive versus Problem-Solving Processes

Causal attribution, or focusing on reasons, is often conceptualized as a posthoc analysis of what happened before, during, and after an event for the purpose of identifying cause-effect covariances. When attributing cause, depressed individuals often may rely on what they know about themselves and the world around them—negative cognitive schemata (Andersen, Spielman, & Bargh, 1992; Beck, 1967)—to come to the conclusion that causality rests with something unmodifiable about themselves. On the other hand, undoing may be more of a problem-solving oriented process (Lazarus & Folkman, 1984) that leads the individual to think about what could have been different about the event. Undoing the various features of an event may allow the individual to view the event from different perspectives and develop strategies for dealing with a similar event in the future. Consistent with this notion, Pennebaker and Beall (1986) find that the process of writing and organizing one's thoughts about a traumatic experience is more likely to produce positive health benefits than is merely focusing on the facts of the experience. In our view, the problem-solving nature of the undoing process may give depressed individuals a greater opportunity to satisfy their secondary control motivations than might the reasons-oriented nature of the causal attribution process (cf. Wilson & Schooler, 1991). It may be for this reason, then, that depressed individuals show more of a tendency to focus on controllable than uncontrollable aspects when they undo an event than when they ascribe cause for an event.

Depressed compared to nondepressed individuals also have been found to ruminate and self-focus in reaction to negative outcomes (e.g., Nolen-Hoeksema, 1991; Pyszczynski & Greenberg, 1987; Wood, Saltzberg, Neale, Stone, & Rachmiel, 1990). Nolen-Hoeksema and her colleagues (e.g., Lyubomirsky & Nolen-Hoeksema, 1993, 1995; Morrow & Nolen-Hoeksema, 1990) have described ruminative responses to depressed

mood as thoughts and behaviors depressive symptoms and on the toms. In a recent set of studies, Ly induced some depressed individ tion on their current feeling state tract themselves from their cu findings, depressed individuals i tic attributions for hypothetical generated poorer-quality solutio viduals who first distracted their mination also appears to be a p inhibits problem-focused coping viduals to believe that their p really are (Lyubomirsky & Nole about the negative aspects of a p tion of "state orientation," a conc ent, or future state that inhibits c the problem.

It is quite reasonable to c form of rumination (cf. Martin & various forms of ruminativ thought—especially *controllable* functional. Indeed, focusing inc differently" should be more like cusing them on their feelings. state orientation, controllable c correspond to "action orientatio to focus on *alternative* plans of ac

WHY DO DEPRESSIVES S PE

The results of the presen mildly depressed individuals negative life events by mutating pects, then why do they suffer nondepressed individuals? Mo individuals on alternative solu do depressed individuals suffe: ability relative to nondepresses ou, 1993; Marx, Williams, & C

Although we can only sp possibilities. First, although de

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scribed. In our view, the greater compared to nondepressed persons to controllable features of the events were by their nature avoid- depressives are asked to attribute through an entirely different cog- evaluate the necessity and suffi- cing, uncontrollable antecedents. depressed than nondepressed in- more necessary and/or sufficient

Passive versus Problem-Solving

asons, is often conceptualized as re, during, and after an event for covariances. When attributing rely on what they know about —negative cognitive schemata (Scheff, 1967)—to come to the conclu- unmodifiable about themselves. e of a problem-solving oriented ds the individual to think about event. Undoing the various fea- to view the event from different aling with a similar event in the baker and Beall (1986) find that s thoughts about a traumatic ex- e health benefits than is merely our view, the problem-solving depressed individuals a greater trol motivations than might the tribution process (cf. Wilson & Men, that depressed individuals rollable than uncontrollable as- they ascribe cause for an event. ed individuals also have been ion to negative outcomes (e.g., Pennington, 1987; Wood, Saltzberg, Hoeksema and her colleagues 1993, 1995; Morrow & Nolen- ative responses to depressed

mood as thoughts and behaviors that focus individuals' attention on their depressive symptoms and on the causes and consequences of those symptoms. In a recent set of studies, Lyubomirsky and Nolen-Hoeksema (1995) induced some depressed individuals to ruminate by focusing their attention on their current feeling states, and other depressed individuals to distract themselves from their current feeling states. According to their findings, depressed individuals induced to ruminate gave more pessimistic attributions for hypothetical events and interpersonal problems, and generated poorer-quality solutions to these problems than depressed individuals who first distracted themselves from their current mood. Thus, rumination also appears to be a passive reaction to negative outcomes that inhibits problem-focused coping and, indeed, may also lead depressed individuals to believe that their problems are less controllable than they really are (Lyubomirsky & Nolen-Hoeksema, 1995). Similarly, brooding about the negative aspects of a problem corresponds to Kuhl's (1981) notion of "state orientation," a condition of perseveration on one's past, present, or future state that inhibits one from taking direct action to deal with the problem.

It is quite reasonable to characterize counterfactual undoing as a form of rumination (cf. Martin & Tesser, 1989; Tait & Silver, 1989). Of all the various forms of ruminative thought, however, counterfactual thought—especially *controllable* counterfactual thought—may be the most functional. Indeed, focusing individuals on what they "could have done differently" should be more likely to enhance control perceptions than focusing them on their feelings. Thus, just as rumination corresponds to state orientation, controllable counterfactual thought may more closely correspond to "action orientation," described by Kuhl (1981) as a tendency to focus on *alternative* plans of action for the purposes of achieving a goal.

WHY DO DEPRESSIVES STILL SUFFER FROM CONTROL LOSS PERCEPTIONS?

The results of the present studies raise an interesting question: If mildly depressed individuals routinely restore perceived control over negative life events by mutating more controllable than uncontrollable aspects, then why do they suffer from control loss perceptions relative to nondepressed individuals? Moreover, if counterfactual thinking focuses individuals on alternative solutions to problematic situations, then why do depressed individuals suffer from marked deficits in problem-solving ability relative to nondepressed individuals (e.g., Conway & Giannopoulos, 1993; Marx, Williams, & Claridge, 1992)?

Although we can only speculate at this point, we suggest several possibilities. First, although depressed individuals may be capable of en-

hancing perceived control over a number of specific life events, they simply may be bombarded by too many seemingly aversive and uncontrollable events to be able to restore any generalized feelings of control. Second, although depressed individuals may feel like they have control over an impending event, they may experience "breakdowns" in the implementation of behavioral strategies designed to deal with a recurrence of the event. As recent reviews by Gollwitzer (1990, 1993) suggest, depressed affect and ruminative or self-focused thought can sap the cognitive resources needed for the effective implementation of goal intentions. Likewise, Lyubomirsky and Nolen-Hoeksema (1995) suggest that ruminating on one's depressed mood can prevent individuals from effectively carrying out problem solutions by sapping their energy and motivation and impairing their concentration. Additionally, depressed individuals have been shown to be less likely or willing to take actions that might expose them to social risk (Pietromonaco & Markus, 1985; Pietromonaco & Rook, 1987). Also, Beck, Rush, Shaw, and Emery (1979) have suggested that depressed individuals' greater requirement for certainty of the correctness of a decision before committing to it contributes to their failure to make the appropriate response (Coyne, Aldwin, & Lazarus, 1981); Miller & Lewis, 1977). Thus, although depressed individuals may be able to develop constructive thoughts and strategies, their difficulties in converting those thoughts into action may leave them feeling as frustrated and control deprived as ever. Clearly, future research would benefit from an analysis of the action phases (Heckhausen, 1991) most influenced by depressives' counterfactual thought. It may well be that the restoration of secondary control engendered by depressives' counterfactual thought influences primarily the predecisional and postactional phases, but has relatively little impact on the actional phase. In a similar vein, it also would be useful to examine how feelings of self-efficacy (i.e., expectations of being able to successfully implement specific courses of action—Bandura, 1996) might moderate the relationship between depressive controllable counterfactual thought and control perceptions. For instance, controllable counterfactual thought may only impact the actional phase when self-efficacy expectations are high (cf. Sanna, 1997).

Finally, a third possibility is that depressed individuals do not always mutate controllable over uncontrollable aspects spontaneously. Rather, the initial reaction to a negative outcome may be to ruminate about one's depressed mood, as well as the causes and consequences of that mood. However, it should be noted that the simple instruction used in the present studies to "think about how the event could have been different" was enough to engage depressed individuals in a control restoration process. Thus, therapies designed to distract individuals from their moods by engaging them in counterfactual-listing exercises might be beneficial, at least on a short-term basis, for restoring control perceptions.

IMPLICATIONS FOR NEGATIVE SENSE

Elsewhere in the literature (e.g., Davis et al., 1995) have characterized up psychological "trade-offs" for prepare one for the future, but the sense of engendering "unnecessary" (Davis et al., 1995). In a similar vein, "boost" in control perceptions at time events, this focus on control blame themselves, perhaps and In fact, recent research by Davis believe that they could have avoided blame themselves for the event engender negative affect. In terms suggest that the depressogenic tendency actually be a major source of the affect that characterize the depressed

Study 2 suggested a potent counterfactual thinking and perhaps can provide a sense of meaning specifically, participants who mutated aspects experienced increases in believed that counterfactuals provide insight; this finding also establishes need for meaning and perceived such beliefs, on the other hand, control from mutating more controllable. Davis and Lehman (1995) hypothesize that it may be an important goal of counterfactual thinking: examining victims of traumatic events (Davis et al., 1995; Davis et al., 1995) are very unlikely to recur and, therefore, concerns. According to these research, explicit expectations or assumptions that a negative outcome shatters the event, and individuals then become more event, and counterfactual thinking this. In general, then, the relationship between counterfactual thinking and control search to explore, as sense-making, the conditions behind counterfactual thinking

Before concluding, we should note that our results may well not be specific to individuals experiencing mild and moderate levels of depression. Indeed, the specific component of depression in which we were interested, control loss perceptions, also is known to be a feature of anxiety disorders (Alloy et al., 1990; Garber, Miller, & Abramson, 1980; Marsh & Weary, 1994). Just as we have shown that the relationship between level of depressive symptomatology and type of counterfactual thought is mediated by control loss perceptions, we would expect future research to demonstrate that they also mediate the relationship between the level of anxiety and counterfactual type.

CONCLUSION

In conclusion, the present studies support the notion that depressed compared to nondepressed persons are more likely to mutate controllable than uncontrollable aspects of life events in an effort to restore generalized perceptions of control loss. Moreover, it appears that mutating more controllable than uncontrollable aspects of negative life events enhances feelings of control over these events, particularly if they are repeatable. In general, these results represent an initial step toward describing the manner in which depressed persons engage in counterfactual thinking about negative life events, as well as the manner in which perceived control can be attained through such counterfactual thought. We believe that a further integration of research on depressive symptomatology, counterfactual thinking, and action control will be extremely beneficial for the advancement of theory in all three domains. In turn, such advancements also may increase the potential for clinical applications.

NOTES

1. One caveat we should mention, however, is that individuals who are severely depressed might have low motivation to make counterfactuals about controllable aspects. At extreme levels of depression, individuals' general perceptions of control may be so low that they would be unlikely to believe that there is anything they can do to control their outcomes (see Marsh & Weary, 1989). Such extreme levels of uncontrollability could be expected to result in a helplessness pattern of behavior (i.e., passivity and withdrawal) rather than the active attempts to regain control that we expected to be demonstrated by the mildly depressed participants in the present studies.
2. We would not want to suggest, however, that negative and nonrepeatable events never result in the generation of upward counterfactuals. For instance, Davis, Lehman, Wortman, Silver, and Thompson (1995) found that people suffering the traumatic loss of a loved one—a nonrepeatable event—generated a great many upward counterfactuals. In our view, the strong degree of personal and emotional involvement in these events and

- the absence of plausible downward the generation of upward counterfactuals.
3. In light of the possibility that counterfactuals might also lead to a focus on control loss, we conducted a series of experiments regarding how event repetition and the content of counterfactuals influenced the generation of upward counterfactuals.
 4. The BDI was readministered to participants who did not complete all of the experimental tasks. Participants who remained in their appropriate category and those who changed category were excluded from analyses. Participants who experienced a transient mood state during the BDI were also excluded.
 5. Preliminary analyses revealed no differences between depressed and nondepressed participants in terms of how negatively they felt about the event ($M = 7.36$, respectively), or in terms of how much they regretted the event ($M = 6.20$ and 5.72 , respectively) between repeatable and nonrepeatable events they described ($M = 6.20$ and 5.72 , respectively). In general, there were no differences between depressed and nondepressed participants in the context of negative life events (e.g., personal, health, or other).
 6. There was no overall effect of depressed participants on the generation of counterfactuals generated, and the interaction between depressed participants and event type was not significant. Participants, overall, did mutate more controllable than uncontrollable aspects ($M = 1.26$), replicating previous research (Markman et al., 1995; N'G'balala & Brannon, 1995a).
 7. In order to provide evidence of mediation, we conducted a series of experiments to demonstrate three patterns of relationships: (1) the mediator (PCS) should be related to the criterion (CCT); (2) the independent variable (depression) should be related to the mediator (PCS); and (3) the relationship between the independent variable and the criterion should become nonsignificant when the mediator is included in the model.
 8. Once again, there were no differences between depressed and nondepressed participants in terms of how negatively they felt about the events, or the general control loss perceptions. Additionally, there were no differences between depressed and nondepressed participants in terms of their beliefs in meaning (Aspinwall & Weary, 1995). In Study 1, an ANOVA revealed a significant main effect of depression ($F = 1.43$), and depressed participants mutated more controllable than uncontrollable aspects ($M = 1.43$), and nondepressed participants ($M = 1.26$).
 9. Meaning and CCT were not significantly related.
 10. This insightful possibility was suggested by Aspinwall and Weary (1996) paper.

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at our results may well not be and moderate levels of depression in which we were interwoven to be a feature of anxiety (Markman, & Abramson, 1980; Marsh & Crano, 1980). The relationship between level of counterfactual thought is mediated by perceived control. We expect future research to demonstrate a relationship between the level of

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support the notion that depressed individuals are likely to mutate controllable aspects of negative life events in an effort to restore generalized control. It appears that mutating more controllable aspects of negative life events enhances feelings of control, particularly if they are repeatable. In general, the shift toward describing the manner in which perceived control can be exercised through counterfactual thinking about negative life events is beneficial for the advancement of research, such advancements also may be applied to clinical settings.

Individuals who are severely depressed have low perceptions of control about controllable aspects. At extreme levels of depression, perceptions of control may be so low that they are unable to do anything they can do to control their outcomes. Levels of uncontrollability could be exacerbated by passive and withdrawn behavior (i.e., passivity and withdrawal) that we expected to be demonstrated by depressed individuals in past studies.

Negative and nonrepeatable events never occur. For instance, Davis, Lehman, Wortman, and Crano (1980) found that people suffering the traumatic loss of a loved one generate a great many upward counterfactuals. In general, the shift toward describing the manner in which perceived control can be exercised through counterfactual thinking about negative life events is beneficial for the advancement of research, such advancements also may be applied to clinical settings.

the absence of plausible downward counterfactual alternatives overwhelmingly favor the generation of upward counterfactuals under such circumstances.

3. In light of the possibility that components of depression unrelated to control concerns might also lead to a focus on controllable aspects, we decided not to make any firm predictions regarding how event repeatability might moderate the relationship between depression and the content of counterfactual thought.
4. The BDI was readministered to participants at the end of the experiment, after they had completed all of the experimental materials. Only those participants whose scores remained in their appropriate category were included in the final analyses. Participants who changed category were excluded from the sample because they may have been experiencing a transient mood state.
5. Preliminary analyses revealed no differences between depressed and nondepressed participants in terms of how negatively they rated the events they described ($M_s = 7.54$ and 7.36 , respectively), or in terms of how much pre-counterfactual control they felt they had over the event ($M_s = 6.20$ and 5.72 , respectively). Additionally, there were no differences between repeatable and nonrepeatable events in terms of how negatively participants rated the events they described ($M_s = 7.41$ and 7.50 , respectively), or in terms of how much pre-counterfactual control they felt they had over the event ($M_s = 6.11$ and 5.81 , respectively). In general, there were no differences between these two groups in terms of the context of negative life events they chose to describe—academic, work, interpersonal, health, or other.
6. There was no overall effect of depression or repeatability on the sheer number of counterfactuals generated, and the interaction between these factors also was not significant. Participants, overall, did mutate more controllable ($M = 2.06$) than uncontrollable aspects ($M = 1.26$), replicating previous findings (Davis et al., 1995; Giroto et al., 1991; Markman et al., 1995; N'Gbala & Branscombe, 1995; Niedenthal et al., 1994; Roesse & Olson, 1995a).
7. In order to provide evidence of mediation by employing this procedure, it is necessary to demonstrate three patterns of relationships: (1) the predictor (depression) and the mediator (PCS) should be related; (2) the predictor and mediator should be independently related to the criterion (CCT); and (3) the effects of the predictor on the criterion should become nonsignificant when the effects of the mediator are controlled.
8. Once again, there were no differences between depressed and nondepressed participants in terms of how negatively they rated the event, how much control they felt they had over the events, or the general context of the events they chose to describe. Additionally, there were no differences between depressed and nondepressed participants in terms of their beliefs in meaning ($M_s = 5.99$ and 5.62 , respectively). In a replication of Study 1, an ANOVA revealed a Depression \times Counterfactual Type interaction—depressed participants mutated more controllable aspects ($M = 2.34$) than did nondepressed participants ($M = 1.43$), and somewhat fewer uncontrollable aspects ($M = 1.22$) than did nondepressed participants ($M = 1.67$).
9. Meaning and CCT were not significantly related to one another ($p > .10$).
10. This insightful possibility was suggested by an anonymous reviewer of the Markman and Weary (1996) paper.

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MIROSLAW KOFTA

INTRODUCTION

In the last three decades, a psychological inquiry has been directed at how the loss of control affects human motivation and psychological well-being, adaptation, and health. Of considerable interest, two perspectives have emerged in the psychological literature on the loss of control. Essentially, the first perspective views control loss as a "mobilizer" (an experience that in itself does not severely undermine active coping), while the second perspective views control loss as a "demobilizer" (an experience that severely undermines active coping).

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