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# Ease of Counterfactual Thought Generation Moderates the Relationship Between Need for Cognition and Punitive Responses to Crime

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*Punitive responses to crime have been linked to a relatively low need for cognition (NFC). Sargent's (2004) findings suggest that this relationship is due to a relatively complex attributional system, employed by high-NFC individuals, which permits them to recognize potential external or situational causes of crime. However, high-NFC individuals may also be more likely to engage in counterfactual thinking, which has been linked to greater judgments of blame and responsibility. Three studies examine the relationship between trait and state NFC and punitiveness in light of counterfactual thinking. Results suggest that the ease of generating upward counterfactuals in response to an unfortunate crime moderates the NFC-punitiveness relationship, such that high-NFC individuals are less punitive than low-NFC individuals only when counterfactual thoughts are relatively difficult to generate. These findings are discussed in light of punishment theory and their possible implications with regard to the legal system.*

**Keywords:** *counterfactual thinking; need for cognition; punishment; attitudes*

In both a general and an abstract sense, many people appear to endorse the notion that lengthy and severe punishments for crimes are necessary to reduce the frequency and likelihood of future crimes. Yet, the majority of individual sentencing decisions are more consistent with a "just-deserts" rationale, whereby the judged deservingness of a punishment is proportionate to the severity of the crime committed. In three separate studies, Carlsmith, Darley, and Robinson (2002) examined *why* people punish. Their findings suggested that people have a tendency to endorse a deterrence rationale for punishment but exhibit behavior consistent with a

just-deserts rationale. Such findings are consistent with several other examples of how people apparently process general and specific cases quite differently (Sherman, Beike, & Ryalls, 1999). However, in comparison to why people punish, there appears to be greater variance in *who* supports the lengthiest and most severe punitive measures. For instance, with regard to attitudes toward the death penalty for persons convicted of murder, significant variance in endorsement exists across almost every demographic variable (Gallup Organization, 2008). Thus, it is reasonable to expect that individual differences also covary with support for punitive measures to crime.

A better understanding of the type of person who supports punitive responses to crime may provide deeper insights into why people support them. Such research also holds important implications for the legal system. For instance, during the juror selection process, an attorney may select particular individuals if she is privy to the juror characteristics that covary with punitiveness. In addition, the sentence length for a crime is imposed by the discretion of a court (within legal parameters, such as acceptable sentence ranges). Courts

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are made up of diverse groups of people with various demographic characteristics, opinions, values, belief systems, political views, and individual differences. A central question concerns whether there are individual differences, among judges and juries, that determine whether a person convicted of auto theft, for example, receives 4 years in prison versus 5 years in prison. Such factors may help to explain why variance exists in the length and seriousness of sentences, for the same crimes, between courts. The diversity of individual differences within courts, or lack thereof in some cases, may be a potentially fruitful predictor of the severity of punitive sentences. One important way that people may vary, with relevance to punitive responses to crime, involves the way in which they think about crime-related information and develop causal attributions about a crime. Answering some of the important cognitive-based questions regarding who supports punitive responses to crime was the focus of Sargent's (2004) studies on the relationship between punitiveness and the individual difference variable of need for cognition (NFC).

#### **NFC AND SUPPORT FOR PUNITIVE MEASURES**

The NFC (Cacioppo & Petty, 1982) refers to a person's desire for, and likelihood of, engaging in cognitively effortful tasks (Cacioppo, Petty, Feinstein, & Jarvis, 1996). People who have a high NFC find effortful cognitive activities to be relatively more enjoyable compared to that of low-NFC individuals. Although high-NFC individuals are no more capable of engaging in effortful thought and appear to have no greater cognitive ability than low-NFC individuals, high-NFC individuals typically welcome effortful cognitive activities. In contrast, low-NFC individuals tend to avoid such activities unless they are extrinsically motivated to engage in them.

Although much of the research on NFC has focused on its role in attitude change in response to persuasive communications, Sargent (2004) suggested that NFC may also play an important role in shaping political views and endorsement of punitive measures in response to crime. Specifically, Sargent proposed that high-NFC individuals use more complex attributional systems than do low-NFC individuals when determining the cause of another person's behavior (e.g., criminal behavior). Attributionally complex individuals have a greater tendency to think abstractly and entertain situational (i.e., external) causes of behavior (Fletcher, Danilovics, Fernandez, Peterson, & Reeder, 1986) than do attributionally simple individuals. According to this perspective, an individual with a relatively complex system for determining causes of behavior would be more likely to

perceive a robber's behavior as being possibly the result of living in a disadvantaged situation or an inevitable consequence of a capitalistic society than would an individual with a relatively simple attributional system. Because NFC appears to be positively correlated with attributional complexity (see Petty & Jarvis, 1996), Sargent further reasoned that high NFCs may be less punitive than low NFCs. In fact, Sargent's correlational data strongly suggested that attributional complexity plays a mediational role in the relationship between NFC and support for punitive measures.

#### **NFC AND PUNITIVENESS IN LIGHT OF COUNTERFACTUAL THINKING**

Although Sargent's (2004) studies provided important insights into one individual difference variable that appears to predict support for punitive responses to crime, his conclusions were based on correlational data. Thus, what is currently known about the relationships between NFC, attributional complexity, and support for punitive responses is limited with respect to the psychological processes thought to drive these relationships. That is, it is unclear why high-NFC individuals appear to use a more complex attributional system as well as whether or not NFC plays a causal role in its relationship with punitiveness. However, there seem to be distinct thought processes associated with NFC that may provide a deeper understanding of the NFC-attributional link.

We propose that one source of the difference in attributional complexity between high- and low-NFC individuals, as it relates to punitive judgments, involves how high- and low-NFC individuals weigh the counterfactual thoughts they generate in response to a negative event. Counterfactual thinking involves mentally simulating alternatives to reality and playing out the consequences of such alternatives through one's imagination (Kahneman & Miller, 1986; Kahneman & Tversky, 1982; Roese & Olson, 1995). We focus our attention on simulations of alternatives that are more desirable than reality (i.e., upward counterfactual thinking; Markman, Gavanski, Sherman, & McMullen, 1993), as this type of counterfactual thinking is a much more common response to undesirable events.

Kasimatis and Wells (1995) expected NFC to be positively correlated with counterfactual thinking because, after all, high-NFC individuals appear to find thinking enjoyable, and there is little reason to expect people who do not enjoy thinking activities (i.e., low-NFC individuals) to mentally simulate as many versions of an event as might high-NFC individuals. On the other hand, Sargent (2004) demonstrated that NFC is

negatively correlated with support for punitive measures, whereas much of the counterfactual research has shown that upward counterfactual thinking tends to increase negative affect (Gleicher et al., 1990; Johnson, 1986; Landman, 1987; Medvec, Madey, & Gilovich, 1995) and augment judgments of blame and responsibility (Goldinger, Kleider, Azuma, & Beike, 2003; Miller & Gunasegaram, 1990). In fact, legal professionals are well aware of such effects and utilize counterfactual thinking to influence legal decision making and juror perceptions of causality and blame (see Robbennolt & Sobus, 1997; Spellman & Kincannon, 2001; Wiener et al., 1994).

Thus, NFC and counterfactual thinking would seem to have opposing effects on one's support for punitive measures to the extent that both blame and external attributions for crime are linked to this support. If, however, high-NFC individuals are more likely to refrain from engaging in counterfactual thinking than low-NFC individuals, or if high-NFC individuals place less judgmental weight on counterfactual thoughts, there should be little conflict between the effects of NFC and counterfactual thinking on support for punitive measures.

However another possibility could be that high- and low-NFC individuals do not differ in the extent to which they engage in counterfactual thinking. If this is the case, high-NFC individuals may be less punitive in their judgments, despite counterfactualizing, because they tend to integrate metacognitive information into their judgments differently than do low-NFC individuals (Tormala, Petty, & Briñol, 2002). That is, in addition to thought content, the experienced ease or difficulty of generating thoughts in response to an event appears to be important to judgments when people are under conditions of high, rather than low, levels of cognitive elaboration (Hirt, Kardes, & Markman, 2004; Tormala et al., 2002; Wänke & Bless, 2000). For instance, highly accessible thoughts may be indicative of relatively high clarity and correctness of one's viewpoint (Petrocelli, Tormala, & Rucker, 2007). High-NFC individuals would seem to be more cognizant of such implications compared to low-NFC individuals.

Unfortunately, the limited data that address the relationship between NFC and counterfactual thinking are inconclusive. To our knowledge, the only reported examination of this relationship (Kasimatis & Wells, 1995) provided mixed results (many of which were not statistically significant). One possibility for such mixed results is that Kasimatis and Wells (1995) used procedures that may have enhanced cognitive elaboration, even for low-NFC individuals. For instance, in one study Kasimatis and Wells asked participants to think about and describe a particularly negative event that occurred to them within the past year and to then list

thoughts they had about the event since it occurred. With the employment of such procedures, even low-NFC individuals might be expected to generate a relatively high number of counterfactual thought responses, comparable to that expected from high-NFC individuals.

In the current investigation, we examined the influence of NFC on punitive responses in light of counterfactual thinking. To this end, we first conducted a study to determine whether NFC is in any way associated with counterfactual thinking.

## STUDY 1

The purpose of Study 1 was to test whether NFC is associated with counterfactual thinking using three different methods and three separate samples of participants. Some participants were asked to read one of two different scenarios and to list "if only" statements in reaction to the events described in the scenarios. Other participants were asked to read one of two different scenarios and simply to list whatever thoughts that came to mind as they learned about the events. A final group of participants was asked to complete self-report measures that assessed NFC and their tendency to engage in counterfactual thinking in response to negative events.

### Method

#### *Participants*

One-hundred twenty undergraduate students, enrolled in an introductory psychology course at Wake Forest University, were recruited through an electronic participation pool. All participants received credit as partial fulfillment of their research experience requirement. Participants were randomly assigned to one of three separate samples, with each sample consisting of 40 participants.

#### *Procedure*

On arrival at the laboratory, participants were greeted by a laboratory assistant, who gave them a brief oral introduction to the study. Each participant was then escorted to a private cubicle equipped with a personal computer. Participants remained in the cubicle for the duration of the study. All of the instructions and stimuli were presented via the professional experimental computer software, MediaLab v2004 Research Software (Jarvis, 2004). The instructions of the study were self-paced, and participants advanced the instructions by pressing the space bar or an equivalent response key. The study was described to participants as an investigation of social perception.

*Sample 1 and Sample 2.* After being introduced to the study and reading some initial instructions, participants assigned to Sample 1 and Sample 2 were asked to read a scenario. Sample 1 participants read a scenario that described Harold, a drunk driver who committed a crime, and Sample 2 participants read a scenario that described Mark, a baseball fan fallen victim to an unfortunate series of events (see the appendix). To ensure enough variance in the frequency of counterfactual thoughts, the scenarios were constructed so as to provide participants with several features that would promote counterfactual simulations.

After reviewing the scenario, participants were asked to complete a thought-listing task. Half of the participants assigned to Sample 1 and Sample 2 were informed that after negative experiences (such as the one they just read about) people sometimes cannot help thinking “if only . . .” and imagining how things might have gone differently. It was further explained that many people often thought and often said, “If only . . .,” during the days that followed the accident. Participants were asked to list how people continued this thought. The next 10 screen frames asked participants to list an “if only” thought (one per screen frame) that came to mind in reaction to the accident. Participants were instructed to press Enter after each individual thought and to type only one thought per screen. They were reminded to begin each thought with the words “If only. . . .” Participants were not instructed to list any particular number of counterfactual thoughts, and it was noted that if they ran out of thoughts they were to type “N/A” for any remaining thought-listing screen frames and to move on to the next part of the study.

The other half of the participants assigned to Sample 1 and Sample 2 followed the same instructions; however, these participants were instead given open-ended thought-listing task instructions. They were not informed about “if only” statements and were asked simply to list the first thoughts that came to mind in response to the scenario that they read.

*Sample 3.* Participants assigned to Sample 3 were asked to complete the 16-item Counterfactual Thinking for Negative Events Scale (CTNES; Rye, Cahoon, Ali, & Daftary, 2008). The CTNES includes four separate measures of counterfactual thinking, which include (a) nonreferent downward counterfactuals, (b) other-referent upward counterfactuals, (c) self-referent upward counterfactuals, and (d) nonreferent upward counterfactuals. For this scale, participants were asked to think of an event that occurred somewhat recently and that had a negative impact on them. They were instructed to take a few moments to vividly recall the experience and what it was like. Then they were asked to think about

the types of thoughts they experienced following the undesirable event and to respond to each of the 16 items. Sample items include “I think about how much better things would have been if I had acted differently” and “I wish I had a time machine so I could just take back something I said or did.” Respondents indicated their agreement with each statement using a 5-point response scale, with *never* (1) and *very often* (5) as the anchors. Cronbach’s  $\alpha$  for the four subscales ranged from .72 to .85.

*Need for Cognition Scale.* Participants of all three samples were asked to complete the 18-item NFC scale (Cacioppo, Petty, & Kao, 1984) using a 5-point response scale, with *extremely uncharacteristic* (1) and *extremely characteristic* (5) as the anchors. Sample items include “I find satisfaction in deliberating hard for long hours” and “The notion of thinking abstractly is appealing to me.” The overall Cronbach’s  $\alpha$  for the NFC scale ( $N = 120$ ) was .92.

## Results and Discussion

For participants who listed open-ended thoughts, each thought listing was coded as either counterfactual (i.e., 1) or noncounterfactual (i.e., 0). Two independent judges were instructed to code a thought listing as counterfactual only when there was clear evidence that an alternative to reality (antecedent, outcome, or both) had been considered. A third judge was used to settle any disagreements. We then summed the total frequency of upward counterfactuals for each participant from Sample 1 ( $M = 6.75$ ,  $SD = 2.44$ ) and from Sample 2 ( $M = 7.45$ ,  $SD = 1.70$ ).<sup>1</sup> The large majority of counterfactual thought listings described actions of the target that would have reversed the outcome (e.g., “If only Harold had not been driving drunk the accident would have been avoided” and “If only Mark hadn’t taken advantage of the open seat he wouldn’t have a broken nose”).

When participants were directly asked to list “if only” thoughts in response to the scenarios, NFC and counterfactual thought frequency were uncorrelated,  $r(38) = .18$ , *ns*.<sup>2</sup> The same was also true when participants were asked to list whatever thoughts that came to mind while learning about the events; that is, the correlation between NFC and counterfactual thought frequency was nonsignificant,  $r(38) = -.13$ , *ns*. The scenarios used for Sample 1 and Sample 2 did not differ in the frequency of counterfactuals listed (within each of the thought-listing instruction conditions).

From the Sample 3 data, the four correlations between the NFC scale and the CTNES subscales failed to reach statistical significance: (a) nonreferent downward:

$r(38) = .06$ , *ns*; (b) other-referent upward:  $r(38) = -.22$ , *ns*; (c) self-referent upward:  $r(38) = -.09$ , *ns*; and (d) nonreferent upward:  $r(38) = -.07$ , *ns*.

These results clearly indicate that high- and low-NFC individuals do not differ with regard to their tendency to engage in counterfactual thinking, nor do they perceive themselves to differ. That is, NFC and one's tendency to respond to negative events with counterfactual thoughts appear to be orthogonal. However, there are reasons to believe that support for punitive responses to crime, and its relationship with NFC, may vary with respect to the ease with which counterfactuals are brought to mind. For instance, ease of thought generation can lead to greater confidence and conviction in the thought content generated. Tormala et al. (2002) demonstrated that high-NFC individuals are especially sensitive to the implications of ease of thought generation. Thus, in our subsequent studies we sought to determine whether differences in support for punitive responses among high- and low-NFC individuals depend on high and low frequencies of counterfactual thought; that is, one's naturally occurring frequency of counterfactuals is often considered to be indicative of the ease of counterfactual generation, and frequency can be manipulated to determine the effect of ease of thought generation.

## STUDY 2

In Study 2, we used the drunk driver (i.e., Harold) scenario as the target event to conduct a correlational study of the relationship between NFC and support for punitive responses in light of counterfactual thought frequency. We hypothesized that high-NFC individuals would endorse less punitive responses than low-NFC individuals. However, we also expected the relationship between punitiveness and NFC to become significantly attenuated as counterfactual thought frequency increased (as counterfactuals became easier to generate). Thus, similar to the Tormala et al. (2002) studies, we expected high-NFC individuals to be sensitive to the implications of their thought-listing experiences, such that punitive responses would be less likely to emerge for high-NFC individuals when counterfactual thinking was relatively difficult (as evidenced by the generation of a smaller frequency of counterfactuals). On the other hand, low-NFC individuals should not be sensitive to the implications of their thought-listing experiences and report relatively high punitiveness regardless of their frequency of counterfactual thoughts. We based these predictions on Sargent's (2004) findings regarding NFC as well as earlier counterfactual research that demonstrated the link between high counterfactual thought frequency and judgments of blame and responsibility (Branscombe, Owen,

Garstka, & Coleman, 1996; Branscombe, Wohl, Owen, Allison, & N'gbala, 2003; Creyer & Gürhan, 1997; Fraser, 2001; Goldinger et al., 2003; Miller & Gunasegaram, 1990). These studies showed that the more social perceivers engaged in "would have," "could have," and "should have" thinking, the greater their judgments of blame and responsibility. To the extent that high counterfactual thought frequency indicates greater subjective ease in generating counterfactual thoughts, these predictions are also consistent with Tormala and colleagues' (2002) findings that demonstrated ease of generation effects to be associated with high NFC.

## Method

### Participants

Fifty-two undergraduate students, enrolled in an introductory psychology course at Wake Forest University, were recruited through an electronic participation pool. All participants received credit as partial fulfillment of their research experience requirement.

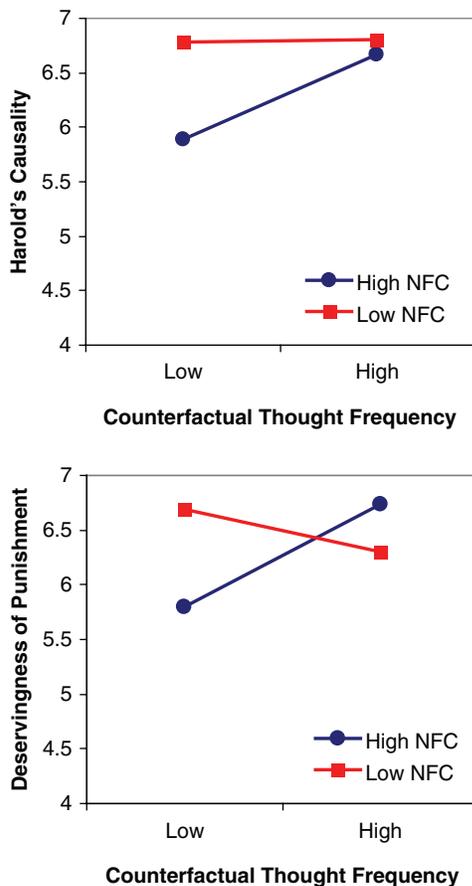
### Procedure

The procedures of Study 2 were very similar to those used for Sample 1 of Study 1. However, all of the participants were provided only with "if only" thought-listing instructions. In addition, participants responded to two different judgment questions. The first judgment question asked participants to indicate the extent to which they perceived the scenario target, Harold, to be the cause of the car accident by responding to the question "How much do you think Harold's actions caused the accident?" using a 7-point response scale with *not at all* (1) and *very much* (7) as the anchors. Next, participants indicated the extent that they felt Harold should be punished by responding to the question "How much do you feel that Harold should be punished for the accident?" using a 7-point response scale with *he should not be punished* (1) and *he should certainly be punished* (7) as the anchors. Finally, participants were asked to complete the NFC Scale (Cronbach's  $\alpha$  for the scale was .89).

## Results and Discussion

On average, the sample listed 7.38 ( $SD = 2.43$ ) counterfactual thoughts. Consistent with our earlier findings, NFC and upward counterfactual thought frequency were again uncorrelated,  $r(50) = .01$ , *ns*.

To test our hypotheses, we used the hierarchical multiple regression model procedures recommended by Cohen and Cohen (1983). Although the two criteria, causality and deservingness of punishment, were



**Figure 1** Predicted means of Harold's perceived causality of, and his deservingness of punishment for, the accident regressed onto counterfactual thought frequency and need for cognition (NFC) in Study 2.

significantly correlated ( $r = .40, p < .001$ ), they shared only 16% of their variance. Thus, for conceptual and statistical reasons, we conducted the same analysis for the two criteria separately. For these regression models, we entered the centered scores of counterfactual thought frequency and NFC in the first step and their interaction term in the second step.

For the model predicting the target's causal role in the accident, the analysis revealed main effects for both counterfactual thought frequency,  $\beta = .28, t(49) = 2.18, p < .04$ , and NFC,  $\beta = -.35, t(49) = -2.69, p < .02$ , such that perceived causality increased as counterfactuals increased and as NFC decreased. However, these main effects were qualified by a significant Counterfactual Thought Frequency  $\times$  NFC interaction,  $\beta = .25, t(48) = 1.95, p = .05$ . Simple slope analyses were conducted according to the procedures recommended by Aiken and West (1991). Thus, the simple slopes were plotted and examined at 1 standard deviation above and below the

means of counterfactual thought frequency and NFC. As displayed in the top panel of Figure 1, a positive and significant relationship between counterfactual thought frequency and judgment of the target's causality emerged, but only among participants high in NFC,  $\beta = .59, t(48) = 3.20, p < .01$ . Also, when counterfactual thought frequency was low, greater perceived causality was associated with low NFC,  $\beta = -.67, t(48) = -3.03, p < .01$ . No other simple slope tests were statistically significant. Thus, the causality judgments of high-NFC participants looked very different from those of low-NFC participants, but only when counterfactual thought generation appeared to be relatively difficult for them.

For the model predicting the target's deservingness of punishment, the analysis revealed a similar pattern; however, no main effects were observed. As expected, a significant Counterfactual Thought Frequency  $\times$  NFC interaction was found,  $\beta = .34, t(48) = 2.50, p < .02$ . Predicted means are displayed in the bottom panel of Figure 1. A positive and significant relationship between counterfactual thought frequency and deservingness of punishment emerged among participants high in NFC,  $\beta = .52, t(48) = 2.48, p < .05$ ; however, a significant relationship was not observed for low-NFC participants,  $\beta = -.21, t(48) = 1.02, ns$ . Also, when counterfactual thought frequency was low, greater deservingness of punishment was associated with low NFC,  $\beta = -.49, t(48) = -2.24, p < .01$ ; however, a significant relationship was not observed when counterfactual thought frequency was high,  $\beta = .24, t(48) = 1.92, ns$ . Thus, the deservingness of punishment judgments of high-NFC participants looked very different from those of low-NFC participants, but only when counterfactual thinking appeared to be difficult.

In general, these findings are consistent with Sargent's (2004) conclusions that less punitive responses are associated with high NFC. However, to the extent that ease of counterfactual thought generation can be operationalized as the frequency of counterfactual thoughts listed given "if only" thought-listing instructions, our data suggest that this relationship is moderated by the ease with which counterfactual thoughts are generated.<sup>3</sup>

One concern with the procedures used in the current study involves the assumption that participants stop listing thoughts as soon as the task becomes difficult or when they begin to lose interest. We reasoned that a manipulation of the difficulty of the counterfactual thought-listing task would better test our hypothesis that the NFC-punitive response relationship depends on the ease of counterfactual thought generation. Furthermore, we also reasoned that manipulating perceived NFC would permit the most direct test of our hypothesis concerning the causal role of NFC on punitiveness.

### STUDY 3

In Study 3, we used two experimental manipulations. First, we attempted to manipulate our participants' perceived level of NFC (i.e., state NFC) using a technique stimulated by Petty and Brock's (1979) demonstration of the effects of "Barnum" assessments on judgments and behavior as well as by Salancik and Conway's (1975) method of manipulating inferences about the self.

Petty and Brock (1979) showed that perceptions of one's traitlike dimensions can be successfully manipulated by providing people with personality feedback descriptions that appear superficially accurate but are, in actuality, quite universal. Interestingly, people deemed to be "open-minded" or "closed-minded" tended to behave according to these estimations. Participants in the Petty and Brock study who were led to perceive themselves as open-minded were significantly more balanced in their thinking than participants who were led to perceive themselves as closed-minded, as evidenced by their greater tendency to acknowledge both sides of an attitudinal issue.

In the current study, rather than providing participants with bogus personality feedback, we made salient particular cognitive content by having participants consider their own biased individual differences information using a modified version of Salancik and Conway's (1975) method of manipulating self-assessment inferences. Their studies showed that self-perceptions of religiousness and attitudes toward an object (e.g., an academic course) could be influenced using a series of carefully constructed true/false statements (e.g., "I go to church . . .") with specific adverbs (i.e., "occasionally" or "frequently"). Salancik and Conway conclusively demonstrated that people respond "true" to items ending with "occasionally" more frequently than they do to items ending with "frequently," regardless of what the item actually suggests. They theorized that responding to such items causes people to recall instances in which they behaved in a way that exemplifies and supports their response. This increase in salience for biased information causes people to judge themselves as more or less religious or, in general, more or less in favor of the attitude object. Because it is unlikely that high-NFC individuals will always behave in ways characteristic of a high NFC, and because it is also feasible that low-NFC individuals will occasionally behave in ways characteristic of high NFCs, we argue that NFC is one individual difference variable that can be manipulated in a similar way.

Rather than making salient behavioral information using adverbs, we made salient notions of one's state NFC by forcing participants to agree (at least somewhat) with a set of either five positively or five negatively worded items taken from the NFC Scale. Consistent

with Salancik and Conway's (1975) assumption that people will attempt to search their memory for information that justifies statements that they endorse, we gave participants time to do so by incorporating a random delay of 5 to 9 seconds between each of five positively or negatively worded NFC items. The remaining eight NFC items were used as a manipulation check.

An alternative option to manipulating perceived NFC would have been to increase the level of cognitive elaboration (i.e., increasing relevance).<sup>4</sup> However, we choose to manipulate perceived NFC because the ways in which high- and low-NFC individuals form judgments is more relevant to our conceptualization than elaboration level. Furthermore, there seem to be important characteristics of NFC (e.g., intrinsically valuing cognitively effortful tasks) that may not necessarily transfer from different elaboration conditions. We also have little reason to expect central route processing to lead to differential weighting of self-generated counterfactual thoughts as they pertain to social judgments. Thus, similar to Petty and Brock's (1979) demonstration of Barnum effects, we theorized that when people perceive themselves to be high in NFC they are motivated to behave in ways that are consistent with a high NFC.

Our second manipulation in Study 3 involved the ease of counterfactual thought generation. It seems intuitive and reasonable to expect greater frequencies of counterfactual processing to be associated with greater perceptions of blame, responsibility, and endorsements of punitive responses. On the other hand, generating several thoughts may lead to the reverse tendency, especially if the thought-generation task is particularly difficult (Briñol, Petty, & Tormala, 2006; Schwarz et al., 1991). Researchers (Tormala, Falces, Briñol, & Petty, 2007; Tormala et al., 2002) have suggested that people assume easy-to-generate thoughts or arguments are more valid or trustworthy, or simply greater in number (Schwarz, 1998), than thoughts or arguments that are more difficult to generate. Although ease of retrieval and ease of generation effects have been assumed to operate at the peripheral or heuristic level of processing, evidence from studies conducted by Tormala et al. (2002) suggest that such effects may operate when conditions of cognitive elaboration are high (or among high-NFC individuals). With regard to generating counterfactual thoughts, Sanna, Schwarz, and Stocker (2002) demonstrated that the difficulty experienced from a cognitively taxing, counterfactual thought-listing task (i.e., listing 10 counterfactuals) can reduce the perceived likelihood that there are multiple ways in which an event may have turned out differently, relative to an easy thought-listing task (i.e., listing only 2 counterfactuals).

Given successful manipulations of state NFC and ease of counterfactual thought generation, we hypothesized

that the relationship between state NFC and punitive responses would be moderated by counterfactual thinking such that our results from Study 2 would be mirrored with respect to ease of counterfactual thought generation (not frequency). Specifically, when counterfactual thought generation was made easy, we expected no difference to be found in punitive responses among high- and low-state-NFC individuals. However, when counterfactual thought generation was made difficult, we expected this difficulty to signal something important to high-state-NFC individuals, such as less confidence in their thoughts or the notion that there are few good reasons to perceive the event as turning out differently than it did. In turn, we expected that high-state-NFC individuals would think differently about the event such that less punitive responses would be observed among high-state-NFC individuals than among low-state-NFC individuals, but only when the counterfactual thought-listing task was difficult.

## Method

### Participants

Ninety-eight undergraduate students, enrolled in an introductory psychology course at Wake Forest University, were recruited through an electronic participation pool. All participants received credit as partial fulfillment of their research experience requirement.

### Procedure

The procedures of Study 3 were similar to those used in Study 2. However, participants were randomly assigned to one of two conditions designed to manipulate their state NFC as well as one of two counterfactual thought-listing task conditions.

Participants assigned to the high-state-NFC condition responded to five of the nine positively worded items of the NFC Scale, with *agree somewhat* (1) and *agree completely* (7) as the anchors. Participants assigned to the low-state-NFC condition responded to five of the nine negatively worded items of the NFC Scale with the same agreement anchors.

The remainder of the procedures followed closely those used in Study 2, with one exception involving the number of “if only” statements that participants were asked to list. We found participants in Study 2 to list an average of approximately 7 counterfactual thoughts. Thus, we were able to select conceivably easy and difficult thought-listing goals for Study 3. Half of the participants were instructed to write only 4 “if only” statements (easy), and the other half were asked to write 10 “if only” statements (difficult). We also included a third dependent variable to assess the severity of the

punishment deserved: “How severely do you feel that Harold should be punished for his actions?” The anchors for this item were *he should receive the mildest punishment* (1) and *he should receive the most severe punishment* (7). All of the participants completed the remaining eight items of the NFC Scale for the purpose of checking the NFC manipulation. These items were presented with the typical *extremely uncharacteristic* (1) to *extremely characteristic* (7) anchor labels. Finally, participants were instructed to think back to when they were asked to complete the thought-listing task and were asked, “How difficult was it for you to complete the task?” using a 7-point scale with the following anchors: *not at all difficult* (1) and *very difficult* (7). This item served as a manipulation check on the difficulty of the thought-listing task.

## Results and Discussion

### Manipulation Checks

The results of a one-way analysis of variance (ANOVA) showed that participants who were asked to list 10 “if only” statements after reading the scenario reported greater difficulty in completing the task ( $M = 3.67$ ,  $SD = 1.49$ ) than did participants who were asked to list only 4 “if only” statements ( $M = 2.76$ ,  $SD = 1.42$ ),  $F(1, 96) = 9.73$ ,  $p < .01$ . It is also worth noting that the difficulty manipulation did not differ across participants assigned to the two NFC conditions. That is, a two-way ANOVA of the difficulty ratings, with difficulty condition crossed with NFC condition, did not show a main effect of NFC,  $F(1, 94) = 2.05$ , *ns*, nor was there a significant interaction,  $F(1, 94) = 0.70$ , *ns*.

To test whether our manipulation of NFC was successful, we examined averages of a composite NFC score using the remaining eight NFC Scale items not used in the manipulation. Because variance was likely to be found in responses to the five positively worded and five negatively worded NFC Scale items used in the manipulation of NFC, we included average agreement with these items as a covariate in a one-way analysis of covariance. According to this analysis, the manipulation was successful. Participants assigned to the high-state-NFC condition reported significantly greater NFC (*adj.*  $M = 3.71$ ,  $SE = 0.07$ ) than participants assigned to the low-state-NFC condition (*adj.*  $M = 3.29$ ,  $SE = 0.07$ ),  $F(1, 95) = 15.47$ ,  $p < .001$ . The covariate also reached statistical significance,  $F(1, 95) = 31.89$ ,  $p < .001$ .

### Dependent Variables

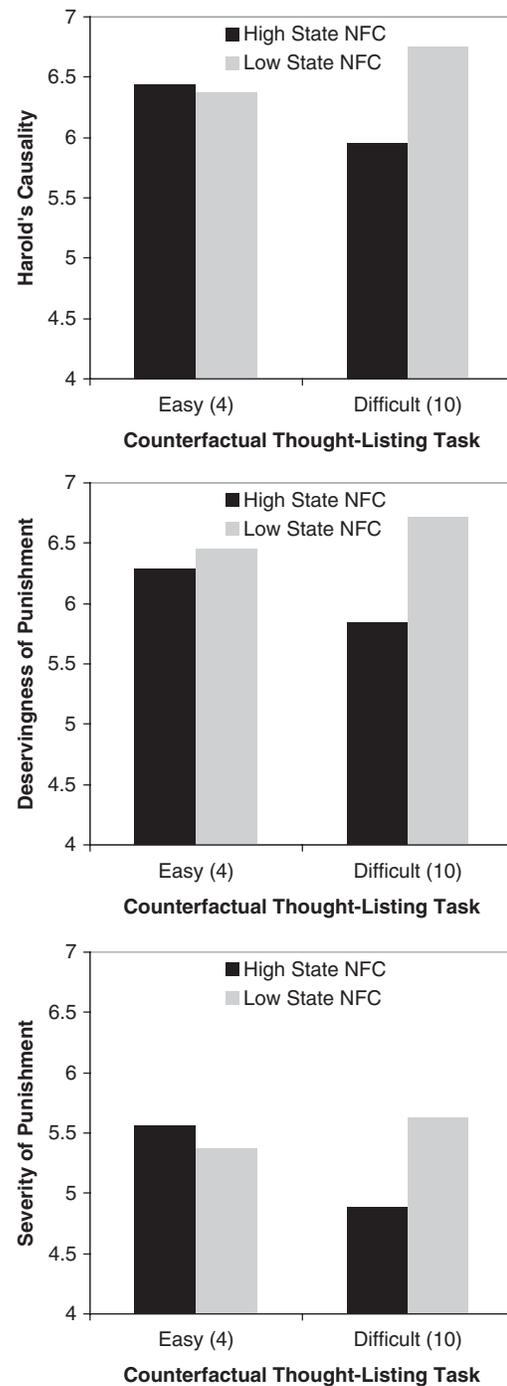
To test our hypotheses, three separate 2 (counterfactual thought-listing instructions: easy vs. difficult)  $\times$  2

(NFC state level: high vs. low) ANOVAs were conducted. The average correlation between the three dependent variables (i.e., perceptions of the target's causal role in the accident, his deservingness of punishment, and the deserved severity of the punishment) was .42 (ranging from .38 to .45).

With regard to perceptions of the target's causal role in the accident, a main effect of state NFC was observed, such that low-state-NFC participants judged the target to play a greater causal role in the accident ( $M = 6.56$ ,  $SD = 0.65$ ) than did high-state-NFC participants ( $M = 6.20$ ,  $SD = 0.90$ ),  $F(1, 94) = 5.48$ ,  $p < .03$ . This main effect was qualified by a significant interaction between counterfactual thought-listing instructions and NFC state level,  $F(1, 94) = 7.62$ ,  $p < .01$  (see the top panel of Figure 2). Two significant simple effects appeared to drive this interaction. When the counterfactual thought-listing task was easy, no significant difference was found between high- and low-state-NFC condition participants,  $t(94) = -0.29$ , *ns*, but when it was difficult, greater causality was judged by participants assigned to the low-state-NFC condition than by the participants assigned to the high-state-NFC condition,  $t(94) = 3.61$ ,  $p < .001$ . In addition, high-state-NFC condition participants reported significantly greater causality when the thought-listing task was easy than when it was difficult,  $t(94) = 2.21$ ,  $p < .05$ .<sup>5</sup>

With regard to perceptions of the target's deservingness of punishment, the pattern of data was very similar. A significant main effect of state NFC was observed, such that low-state-NFC participants judged the target to be more deserving of punishment ( $M = 6.58$ ,  $SD = 0.67$ ) than did high-state-NFC participants ( $M = 6.06$ ,  $SD = 1.05$ ),  $F(1, 94) = 8.60$ ,  $p < .01$ . This main effect was qualified by a significant interaction between counterfactual thought-listing instructions and NFC state level,  $F(1, 94) = 3.73$ ,  $p = .05$  (see the middle panel of Figure 2). When the counterfactual thought-listing task was easy, no significant difference was found between high- and low-state-NFC condition participants,  $t(94) = 0.71$ , *ns*, but when it was difficult, greater deservingness of punishment was judged by participants assigned to the low-state-NFC condition than the high-state-NFC condition,  $t(94) = 3.44$ ,  $p < .001$ . In addition, high-state-NFC condition participants reported marginally greater causality when the thought-listing task was easy than when it was difficult,  $t(94) = 1.76$ ,  $p < .09$ .

Finally, with regard to perceptions of the deserved severity of the punishment, a significant interaction was observed only between counterfactual thought-listing instructions and NFC state level,  $F(1, 94) = 5.29$ ,  $p < .03$  (see the bottom panel of Figure 2). Once again, when the counterfactual thought-listing task was easy, no significant difference was found between high- and



**Figure 2** Means of Harold's perceived causality of, his deservingness of punishment and severity of punishment for, the accident by counterfactual thought-listing task and state NFC conditions (Study 3).

low-state-NFC condition participants,  $t(94) = -0.65$ , *ns*, but when it was difficult, greater severity was endorsed by participants assigned to the low-state-NFC

condition than the high-state-NFC condition,  $t(94) = 2.61, p < .02$ . Also, high-state-NFC condition participants endorsed a greater severity of punishment when the thought-listing task was easy than when it was difficult,  $t(94) = 2.40, p < .02$ .

Despite listing more than twice as many counterfactual thoughts, high-state-NFC individuals who listed 10 counterfactuals endorsed less punitive measures than did high-state-NFC individuals who listed only 4 counterfactuals. The same pattern of results was not found for low-state-NFC individuals. These findings indicate that the experience of the thought-generation task affects the judgments of high-state-NFC individuals but does not affect the judgments of low-state-NFC individuals.

## GENERAL DISCUSSION

The data from the current studies suggest that high-NFC individuals do not engage in counterfactual thinking any more than low-NFC individuals do, nor do they find it easier to generate counterfactuals in response to an event. These data provide some evidence for the idea that people who perceive themselves to have a high NFC weight counterfactual thoughts differently than do people who perceive themselves to have a low NFC when it comes to forming punitive judgments.

At first glance, the patterns of data from Study 2 and Study 3 may appear inconsistent. However, it is important to recognize that more thought does not always equate to the task being easier. When it comes to open-ended and spontaneous thought listings (Study 2), it seems reasonable to operationalize ease and the perceived mutability of an event as the frequency of thoughts listed (as in many counterfactual thinking studies). In such tasks, people seem likely to stop listing thoughts when doing so becomes too difficult. When people are given free rein to list as many thoughts as they want, generating a high frequency of counterfactual thoughts suggests ease, to the extent that people stop listing thoughts when the task begins to become difficult. Under this assumption, generating more than the average number of counterfactuals in Study 2 (approximately 7) was regarded as easy. However, when directly instructed to list several counterfactuals (10), the task was considered relatively difficult because it exceeded the average frequency observed in Study 2. This notion is also supported by the significant manipulation check in Study 3 regarding judgments of thought-listing difficulty (as well as the pilot study reported in Note 3). Thus, a participant who listed 10 counterfactual thoughts in Study 2 (without any instructions to do so) was assumed to find it easy to list counterfactuals, whereas doing so in Study 3 was considered by participants to be relatively more difficult than listing only 4.

In addition, our data suggest that an important factor driving the relationship between support for punitive responses to crime and NFC involves a person's perception of himself or herself as having either a high or low NFC. By successfully manipulating participant perceptions of NFC, we showed that these perceptions can serve the same role as an individual's actual level of NFC. When people who perceive themselves to enjoy cognitively effortful tasks (i.e., high NFC) find it difficult to generate counterfactual thoughts, they may develop less confidence in these types of thoughts or they may conclude that there are few good reasons to think in such a way about the event. We theorize that when this occurs, high-NFC individuals, in turn, consider other ways of looking at the event. This process opens up a broader range of explanations that may include external or situational attributions for criminal behavior.

Our data do not entirely rule out the conclusions of Sargent (2004), who argued that the NFC–punitiveness relationship is due to differences in attributional complexity. In fact, our data may be somewhat complementary to the findings reported by Sargent. Essentially, counterfactual thoughts often imply one's causal ascriptions. Yet, it seems possible that a precursor to what appears to be a difference in attributional complexity is actually a difference in how high- and low-NFC individuals weigh the importance of counterfactual thought reactions. It is also clear from the work of Goldinger et al. (2003) that the generation of counterfactual thoughts tends to be automatic and does not appear to differ across people with different cognitive abilities. Goldinger et al. showed that people sometimes suppress counterfactual thinking. Although our data do not speak directly to suppression, it seems possible that high-NFC individuals suppress the effects of counterfactuals when they are judged to be difficult to generate. On the basis of our studies, we suggest that high- and low-NFC individuals may have the same initial cognitive reactions to events (like those used in our studies and that of Goldinger et al.) but differ in how such thoughts are used to form social judgments. Similar to arguments made by Schwarz et al. (1991) and others (e.g., Winkielman & Schwarz, 2001), we further suggest that people may use the experience of listing thoughts to shape their judgments when this information is perceived as diagnostic. Tormala and colleagues' (2002) data, and our own data, suggest that high-NFC individuals are more likely to be sensitive to the diagnosticity of such information in the first place.

Our results also suggest that when the trait representation of high NFC is activated, people behave in the way that high-NFC individuals typically do (i.e., form judgments in light of the content of their thoughts and the experience of cognitive elaboration), regardless of whether they have high-trait NFC. Such phenomena are

in line with experimental demonstrations that suggest that behavior can be influenced by the activation of trait representations (e.g., Dijksterhuis et al., 1998; Fleenor, Malanos, & Achille, 2002). When a trait construct is activated, the trait functions as an interpretation frame or a guide to behavior, such that perceptual information is interpreted in line with the construct—resulting in behavioral assimilation. This process is conceptually similar to that described by Fazio (1995), in which the activation of a highly accessible attitude serves as a guide for the interpretation of perceptual stimuli and behavior. Thus, high-state-NFC may signal attention and motivation to attend and process information that is relevant to judgment. In the current studies, this type of information would include the experiential information that emerged from the thought-listing task. We believe that ease of generation effects hinge on attending to this experiential information. Anything that increases the salience of such information should enhance the likelihood that the information will affect evaluative judgments.

In light of our data, this explanation assumes that people who are actually low in NFC are not oblivious to the ease or difficulty of counterfactual thought generation. Rather, low-NFC individuals are either not motivated, or not in the frame of mind, to consider the implications of such information for their judgments. However, if low-NFC individuals are prompted by the psychological context to think of themselves in a different way (i.e., as though they are high-NFC individuals), they apparently have the ability to process experiential thought-listing information in the same way that high-NFC individuals tend to.

With regard to attributional complexity, we suggest that high-NFC individuals do use more complex attributional systems, but not necessarily by generating attributions that counter or inhibit punitive judgments. Instead, high- and low-NFC individuals appear to differ in how counterfactual thought-generation experiences are used as information when considering how punitive their judgments should be. When it is easy to undo the actions of a social target, both high- and low-NFC individuals appear to be equally punitive, but when it is not easy to undo the actions of a social target, high-NFC individuals appear to consider what this difficulty means for their judgments. In any case, only further investigation will determine if the differences in punitive responses observed among high- and low-NFC individuals are due to differential weighting of counterfactual thoughts, a difference in attributional complexity, or both.

Another possibility that may enhance the likelihood that high-NFC individuals (and people whose trait representations of high NFC are activated) will weight counterfactual thoughts differently involves thought confidence (see Petty, Briñol, & Tormala, 2002). Studies reported by Petrocelli and Percy (2008) showed that

people vary systematically in their degree of counterfactual thought confidence and that this type of confidence greatly affects emotions and judgments tied to counterfactuals (e.g., regret, causality judgments). It seems possible that information regarding the validity or the correctness of difficult-to-generate counterfactual thoughts is more likely to be detected by high-NFC individuals than by low-NFC individuals. Future studies are needed to investigate the possibility that thought confidence mediates the relationship between ease of counterfactual thought generation and support for punitive measures among high-NFC individuals. Yet other explanations are also possible. For instance, Goldinger et al. (2003) demonstrated that people try to correct for the unwanted effect of automatic counterfactual thoughts when they are motivated and provided with the cognitive resources to do so. Their findings suggest that people have particular beliefs about the effects that counterfactual thoughts might have on their subsequent judgments and that people are insightful enough to sometimes avoid the potentially negative effects of counterfactual thoughts on particular social judgments. It is possible that high-NFC individuals are especially cognizant of, or concerned with, such negative effects and, hence, differentially weight counterfactual thoughts. Thus, the paradigm used in the present studies may be advanced by considering it in light of models that address attempts to avoid or correct for the unwanted effects of the content generated by one's thoughts, such as Martin's (1986) set/reset model and Wegener and Petty's (1995) flexible correction model.

Finally, the data reported here have important implications for the legal system, especially trial law. An obvious implication of Sargent's (2004) findings would be for defense lawyers to lobby for the selection of jury members that are high in NFC because they may be less likely to render punitive sentences. However, our data suggest that when generating counterfactuals is made relatively easy for high-NFC individuals, their judgments of blame and support for punitive measures might look very similar to those of low-NFC individuals. Recently reported data from studies conducted by Giroto, Ferrante, Pighin, and Gonzalez (2007) indicated that people think counterfactually about the outcomes of targets described in scenarios by undoing actions or aspects of the actor, but counterfactuals for one's own experienced outcomes are more likely to be characterized by altering features of the situation. Combining the implications of Giroto and colleagues' data with our speculations, prosecuting attorneys may do well to keep the frame of reference on the defendant rather than have jury members consider and extrapolate from what they, themselves, might have done in a similar situation and to somehow make counterfactualizing relatively easy. Indeed, one potentially fruitful future direction for this research may be to test

the hypotheses in applied settings such as mock trials or the actual courtroom.

## CONCLUSION

In conclusion, our theoretical expectations concerning the relationship between NFC and punitiveness were supported. The present studies provide evidence in favor of the view that ease of counterfactual thought generation moderates the NFC–punitiveness relationship, such that individuals high in NFC assign less blame and are, on average, less punitive than individuals low in NFC, but only when counterfactual thought generation is a relatively difficult task. These results are supportive of Sargent's (2004) findings that high-NFC individuals tend to be less punitive than low-NFC individuals. Sargent argued that the more complex attributional system applied by high-NFC individuals permits them to perceive situational factors in the environment as playing a critical role in the potential causes for criminal behavior. However, the present research is unique in that it expands on Sargent's (2004) conclusions by offering a processing account for why individuals who are high in NFC appear to be less punitive. We suggest that high-NFC individuals do apply a more complex attributional system, but not necessarily by generating attributions that counter or inhibit punitive judgments. Instead, high- and low-NFC individuals appear to differ in how counterfactual thought-generation experiences are used as information when considering how punitive their judgments should be.

The current report also sheds light on the causal relationship between NFC and punitiveness via the consideration of how high- and low-NFC individuals appear to weight the difficulty of generating thoughts in forming their social judgments. Future studies would do well to explore other factors that may contribute to the NFC–punitiveness relationship, including counterfactual thought confidence and whether individuals' idiosyncratic beliefs about counterfactual thoughts influence their subsequent judgments. One potentially fruitful direction for future research would be to test our hypotheses in applied settings such as a mock trial or an actual courtroom.

## APPENDIX SCENARIOS READ BY SAMPLE 1 AND SAMPLE 2 IN STUDY 1

### Scenario Presented to Sample 1

Harold, a 22-year-old college student, arrived at the party just as the festivities were beginning. Over the course of the evening, he consumed large amounts of alcohol and became

very intoxicated. At the height of his intoxication, Harold received a phone call from his brother, who informed him that their 10-year-old sister, Sarah, had recently fallen from her tree house and broken her leg in three places. Sarah was being treated at a hospital located 30 minutes from the party. As a typical, overprotective reaction of Harold's, he was overcome with anxiety about Sarah's accident and was consumed with a desire to comfort his sister. Harold grabbed his car keys and left the party while still highly intoxicated. In an effort to get to the hospital as quickly as possible, Harold drove at speeds well over the prescribed speed limit. Just before making the last turn to the hospital, Harold misjudged the distance between his car and another car pulling out of an adjacent street. Harold collided with the driver's side of the other car. The impact killed the other driver, a mother of two children, both of whom were also injured in the car accident.

### Scenario Presented to Sample 2

Mark is a baseball fan but rarely gets a chance to make it to a game. One day Mark was able to score a free ticket to a game. Unfortunately, on the night of the game, Mark's car broke down. A passerby later helped Mark get his car up and running. Although he was delayed, Mark finally made it to the stadium for the game. Because he was late, another group of fans was crowded around his ticketed seat. Rather than miss more of the game by climbing over the other fans to get to his seat, he decided to take an open seat that was close by. The home team was losing badly in the late innings, and the large crowd began filtering out of the stadium well before the end of the game. Late in the game, Mark took advantage of an open seat closer to the field. During the final inning of the game, however, a batter lined a foul ball that hit Mark in the face, leaving him with a nose that was broken in multiple places. Mark has endured three surgeries to repair his nose. Mark's friends and family notice the drastic change in his nose (for the worse) since the incident.

## NOTES

1. Very few if any downward counterfactuals were listed by the participants, and their inclusion in the analysis did not affect the results; this was true in the current study and in all subsequent studies.

2. Each thought listing was dummy coded using a 1 for any listing that described an alternative antecedent or an alternative outcome (or both) that did not actually occur and a 0 for any listing that did not describe an alternative antecedent or an alternative outcome that did not actually occur.

3. To determine whether this assumption can be supported statistically, we conducted a pilot study using the Harold scenario and the same procedures as those used in Study 2. In this pilot study we asked 93 participants to rate the difficulty of writing "several thoughts," as well as the difficulty of writing four, five, six, seven, and eight thoughts, using 9-point response scales with *not at all difficult* (1) and *extremely difficult* (9) as the anchors. The correlation between total frequency of counterfactual thoughts listed and perceived difficulty of writing several thoughts was statistically significant,  $r(91) = -.35$ ,  $p < .01$ . Each of the correlations between total counterfactual thoughts listed and perceived difficulty of writing four, five, six, seven, and eight thoughts was statistically significant,  $r_s(91) = -.41, -.53, -.62, -.61$ ,

-.63; all  $p < .001$ . These results strongly suggest that people stop listing thoughts when it begins to become difficult and that writing a relatively frequent number of thoughts is indicative of subjective ease compared to that of writing a relatively infrequent number of thoughts.

4. Several researchers, studying processes in attitudinal persuasion, have typically used need for cognition (NFC) as a proxy for cognitive elaboration in initial correlational examinations.

5. Although the two means for low NFC were not statistically significantly different for this dependent variable and for the two subsequent dependent variables, they are in the direction expected of a number effect as described by Tormala, Petty, and Briñol (2002).

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