Jane L. Risen
Research Statement

I am interested in how people form judgments to help them negotiate our complicated, uncertain world. In particular, I focus on the deliberate vs. automatic nature of belief formation, as well as the relative contribution of cognitive and motivated processes to judgment. When does reason or intuition have the upper hand in influencing judgment and behavior, and when do the two work in tandem? How do motivational goals and cognitive processes independently and interdependently influence judgment? Although researchers often approach these "debates" from one camp or the other, I am most interested in the integration of these different perspectives.

First, I will describe my research on magical thinking, which explores how automatic, intuitive processes can give rise to beliefs about the future—such as the belief that one shouldn't tempt fate—despite people's rational knowledge that such beliefs are unfounded (Section I). Second, I will discuss the automatic nature of causal inference by addressing the cognitive and motivational factors that lead to one-shot illusory correlations and to the acceptance of questionable apologies (Section II). Finally, I will describe beliefs that people form to manage their emotions. This section will include research on the mismatch between predicted and experienced regret, emotion-specific coping strategies, and cognitive and motivational accounts for why rationalization is less effective when it is not initiated immediately (Section III). Taken together, the three sections explore future expectations, present explanations, and reactions to past events, highlighting my interest in how people use judgments to navigate their world across points in time.

I. Magical thinking and the belief in tempting fate

A. Why do people believe things that are not true?

The magical thinking literature has traditionally stressed people's cognitive deficits by focusing on culture, age, mental illness, or stress. I contend that a complete understanding of magical thinking requires that one not only understand why the absence of cognitive capacities makes magical beliefs more common, but also why the presence of certain psychological tendencies makes magical beliefs pervasive among intelligent, emotionally-stable adults. I suggest that magical beliefs develop, in part, from people's reliance on a shared set of heuristics for converting complex judgments into simpler mental assessments.

In collaboration with Tom Gilovich, I have provided evidence that people believe negative outcomes are especially likely to occur if they follow actions that "tempt fate" (Risen & Gilovich, 2006a; 2006b). We have tested the hypothesis that this belief may develop from a general tendency to devote greater attention to negative prospects (Baumeister et al., 2001; Rozin & Royzman, 2001) and from assessing likelihood by noting the ease with which relevant instances are brought to mind (Kahneman & Tversky, 1973). We contend that actions that tempt fate elevate the perceived likelihood of misfortune because such painful possibilities are automatically called to mind and, once entertained, they gain fluency and are seen as more likely to occur.

The first step I took in this line of research was to demonstrate that many people believe—even members of elite universities who place a premium on rationality—that if they "tempt fate," bad things are likely to occur. In a series of between-participant studies that used subjective likelihood scales, we found evidence that students have such beliefs (Risen & Gilovich, 2006b). For example, participants thought a protagonist was more likely to be rejected from his top-choice school if he wore a t-shirt from that school while waiting for the school's decision than if he did not wear the shirt.

Several studies suggest that these pessimistic, magical beliefs influence behavior. For example, one laboratory study examined the superstition that calling attention to success invites disaster, and demonstrated that participants whose own apparent winning streak was pointed out were more likely to

forgo a subsequent gamble than those whose identical streak went unmentioned (Risen, Gilovich, Savitsky, & Kruger, 2006). A second laboratory experiment examined the reluctance to exchange lottery tickets, and demonstrated that participants whose lottery tickets had been exchanged bought more insurance to protect against the possibility of losing (Risen & Gilovich, 2006a).

We contend that exchanged lottery tickets are considered especially likely to win because such an outcome is negative, and therefore especially likely to capture the imagination. We examined this claim by varying who owned the exchanged ticket in a scenario (self, friend, stranger, or enemy), and consequently how aversive it would be for the ticket to win. As predicted, tickets were judged more likely to win the more aversive it would be for the ticket to win (Risen & Gilovich, 2006a).

To examine directly whether more negative outcomes spring more easily to mind, and to determine whether this accounts for the difference in their perceived likelihood, I developed a reaction-time measure of accessibility. Participants read a story about an exchanged lottery ticket and then were asked to indicate as quickly as possible whether a one-sentence ending fit the story they just read (or whether it constituted a non sequitur). As predicted, participants were faster to recognize the negative ending "Allison wins the lottery with the ticket that you exchanged," as an ending that made sense the more aversive the outcome would be (e.g., when Allison was an enemy rather than a friend). Moreover, as predicted, recognition latency mediated participants' likelihood judgments (Risen & Gilovich, 2006a).

Using a similar design, we examined the accessibility of both positive and negative outcomes following several other actions that tempted fate to generalize the results and to ensure that only negative outcomes were more accessible following an action that tempted fate (Risen & Gilovich, 2006b). As expected, participants were faster to recognize a negative ending—but slower to recognize a positive ending—if they had earlier read that the protagonist tempted fate. And, as predicted, their likelihood judgments were mediated by their speed to indicate that the ending made sense. Thus it appears that actions that tempt fate automatically call to mind the prospect of a negative outcome, which, in turn, increases the perceived likelihood of such an outcome.

B. Why do people believe things that they "know" are not true?

How can people simultaneously believe something is true and know that it is false? After all, many people who hold magical beliefs are aware that their thoughts are irrational, but despite that awareness, are unable to rid themselves of such beliefs. I contend that the automatic, intuitive processes described above (i.e., the mind's tendency to seize on negative prospects and the connection between imagination and subjective likelihood) create a conflict between an intuitive sense that negative outcomes are especially likely to occur and a rational conviction that the odds of misfortune don't change when fate has been tempted. This sort of conflict is well captured by recent "two systems" accounts of human judgment and reasoning. The intuitive system believes that the universe will punish those who tempt fate and the rational system does not.

To demonstrate the conflict, I explicitly asked participants to rely on their gut feelings or their rational thoughts and report the output of the relevant system. We found that when participants were asked to rely on their gut feelings, 46% endorsed the tempting fate option, but when asked to respond with their rational thoughts, only 5% were willing to endorse the non-rational option (Risen & Gilovich, 2006a).

I suggest that a critical feature of these particular "two system" accounts is that the intuitive processes are always engaged, but that the extent to which deliberate, rational processes are engaged varies. To the extent that rational processing is limited, people's likelihood assessments should reflect more intuitive processing, rather than the usual blend of intuitive and rational output. Supporting this claim, we found that likelihood judgments were more affected by the tempting fate behavior when participants were under cognitive load (Risen & Gilovich, 2006b). Thus, belief in tempting fate is at a maximum when effortful processing is at a minimum.

Understanding the tendency for the intuitive system to automatically focus on easily imagined negative outcomes can illuminate why people sometimes exhibit "sudden death aversion"—the tendency

to choose a "slow" strategy that eliminates or minimizes the chance of immediate defeat, but has a lower chance of ultimate success over a "fast" strategy that has a higher chance of immediate defeat, but a better overall chance of success. In collaboration with Tom Gilovich and Richard Thaler, I asked participants to imagine that they were the coach of a basketball team that was down by two points. They had to decide between a 3-pt shot that would win or lose the game immediately and a 2-pt shot that could send the game to overtime. The 3-pt strategy had a higher chance for immediate defeat, but a better overall chance of success. Despite the odds, a majority of participants exhibited sudden death aversion, preferring to take the 2-pt shot. Their preference was correlated with how easy it was for them to imagine the outcome of the 3-pt shot. That is, the easier it was to imagine immediate defeat, the more likely they were to take the 2-pt shot (Risen, Gilovich, & Thaler, 2006). We extended these findings by asking participants to choose between1- and 2-stage lotteries that either had options with high or low probabilities of success. For both sets of choices, participants thought that the outcome of the 1-stage lottery was easier to imagine. Participants who made their decision without using mathematical calculations made non-rational choices that were based on the intuitive system. Participants who used math did not let ease of imagination guide their decision even though it was also easier for them to imagine the outcome of the 1-stage lottery. Instead, those who used a rule-based process made optimal decisions that did not correlate with their imagination ratings (Risen, Gilovich, & Thaler, 2006).

Taken together, my research suggests that by exploring the intersection of intuitive and rational processes, we can better understand magical beliefs and suboptimal decision strategies, and better predict when people will be guided by their intuition and when they will be critical of their gut feelings.

II. Cognitive and motivational influences on causal inference

A. One-shot illusory correlations and stereotype formation

Hamilton and Gifford (1976) demonstrated that stereotypes sometimes arise, not from base human motivations, but from the faulty workings of human memory. Individuals disproportionately remember, against the backdrop of all actions observed, infrequent behaviors performed by members of an infrequent group. Thus, in Hamilton and Gifford's experiment, an illusory correlation associating the distinctive group with distinctive behavior was built up over time as individuals implicitly learned which behavior and group were infrequent.

However, because a lifetime of experience allows people to code a single action or individual as unusual or common, I believe that Hamilton and Gifford's insight applies more broadly than the existing literature suggests. I contend that just one unusual behavior, performed by one person from an unfamiliar group, is sufficient for an illusory correlation between group and behavior to emerge. Specifically, I suggest that unusual actions on the part of minority group members can generate illusory correlations not simply because they are better remembered, but because they instigate an attributional process in which group membership is considered a possible explanation for the unusual behavior. That is, when a person belonging to a rarely-encountered group engages in rarely-seen behavior, people may wonder whether the individual has behaved that way *because* he or she is a member of that group, and thus begin to form an association between group and characteristic. In collaboration with Tom Gilovich and David Dunning, I explored the phenomenon of one-shot illusory correlations in a set of four studies (Risen, Gilovich, & Dunning, 2006). We found that unusual behaviors committed by members of rare groups were processed differently than other types of behaviors. As predicted, they received more processing time, were more memorable, and prompted more attributional thinking. In addition, we found that one-shot illusory correlations were implicitly generalized to other members of the rare group and influenced subsequent interaction with members of that group (Risen, Gilovich, & Dunning, 2006). These findings highlight how easily stereotypes can develop from the tendency to consider group membership as a possible explanation for an unusual person's unusual behavior.

B. *The acceptance of questionable apologies*

In the year I spent teaching fifth grade students in Morocco, I found myself coercing students to apologize to one another daily. And after I coerced an apology, the student receiving it would almost always skip away in satisfaction. This might be considered odd on the surface, and it begs the question: Do people distinguish between sincere and insincere apologies? Because targets and observers face different situational pressures, I hypothesized that observers would differentiate between spontaneous and coerced apologies, but targets would not. Specifically, I predicted that both motivational concerns and cognitive scripts would lead targets and observers to behave differently and make different causal inferences for a harm-doer's insincere, coerced apology.

In collaboration with Tom Gilovich, I had participants either receive or observe a spontaneous apology, a coerced apology, or no apology following a staged offense, and found support for the predicted target-observer difference. Whereas targets viewed any apology more favorably than no apology (i.e., they liked the harm-doer more, punished him less, and inferred that the harm-doer felt worse), observers viewed a spontaneous apology more favorably than either a coerced apology or no apology (Risen & Gilovich, in press). We found evidence suggesting that the different reactions to insincere apologies are due, in part, to the motivation to be seen positively by others and the motivation to feel good about oneself taking shape differently for targets and observers. For example, participants evaluated targets and observers differently when they rejected insincere apologies, and targets and observers expected to make different self-attributions following the rejection of a coerced apology (Risen & Gilovich, in press). We also found evidence that targets are more constrained by an apology-forgiveness social script than observers are. Only observers thought it was appropriate to reject insincere apologies, and participants' judgments of how one should respond mediated their judgments of how they would respond (Risen & Gilovich, in press).

III. Beliefs that manage emotions

A. The anticipation and experience of regret

Anticipated regret has been shown to play a powerful role in decision making. A critical element of regret is self-blame, which is why people anticipate more regret when they imagine situations that highlight personal responsibility for a negative outcome. Narrow margins of loss—or "near-misses" highlight personal responsibility because it is all too easy to imagine how a small change in one's behavior might have changed the outcome (e.g., "If only I left two minutes earlier I would have made the plane"). Thus, people tend to anticipate more regret for near-misses. But research suggests that people are especially good at avoiding self-blame and are often inaccurate at predicting their future emotion. Therefore, people may anticipate more regret for a near-miss, but if they easily avoid self-blame, the size of the margin separating a bad outcome from a good outcome should have little or no impact on the experience of regret.

I designed my undergraduate thesis to test my hypothesis that a wide or narrow margin would influence the anticipation of regret more than the experience of regret. After finding support for the prediction in a laboratory study, I collaborated with Carey Morewedge, Timothy Wilson, and my undergraduate advisor, Daniel Gilbert, to replicate the effect in a subway station. We found that subway riders overestimated how much more regret and self-blame they would feel if they "nearly caught" their trains than if they "clearly missed" their trains. People anticipated making internal attributions for nearly missing the train (e.g., "I would not have missed the train if only I'd woken up earlier and gotten out of the house faster"), but those who actually experienced the near-miss were skilled at avoiding self-blame and regret by making external attributions (e.g., "I would not have missed the train if only all the gates were opened instead of just one) (Gilbert, Morewedge, Risen, & Wilson, 2004). These results suggest that the motivation to feel good, and to feel good about the self, can drive unanticipated cognitive strategies for coping with regret.

B. *Emotion-specific coping*

According to appraisal-based emotion theories, emotions are elicited by the unique set of cognitive evaluations made about a situation. Because each emotion is uniquely defined by its appraisal pattern, I suggest that people may use coping strategies that are specific to each appraisal pattern. That is, people may reappraise situations to downplay the specific appraisals responsible for the negative emotion they experience. My early research on disappointment and regret lends support to this contention (Risen, 2006a).

Because disappointment depends, in part, on the unexpectedness of an outcome, and regret depends on the extent to which people feel personal responsibility for the outcome (Zeelenberg, van Dijk, Manstead, & van der Pligt, 2000), one could cope with disappointment by believing the outcome matched one's prior expectations, and one could cope with regret by deciding that it was not one's fault. To determine whether participants would use different strategies to cope with these different emotions, I had participants read a large or small loss scenario, which was written to induce the experience of either disappointment or regret. As expected, participants who were induced to feel disappointment coped by claiming that the negative outcome was more likely to have happened in the large loss than in the small loss scenario. Those induced to feel large or small amounts of regret, however, did not distinguish the expectedness of the misfortune. Instead, those who felt regret coped by avoiding blame more in the large loss than in the small loss scenario (Risen, 2006a). This double dissociation in belief suggests that people reduce the intensity of different negative emotions by reappraising situations according to the emotions' appraisal pattern (disavowing feelings of unexpectedness for disappointment, but not regret, and disavowing feelings of responsibility for regret, but not disappointment). I am continuing to research dissociations for other pairs of emotions (e.g., shame and guilt) to generalize the notion of emotion-specific coping strategies.

C. *A critical period for rationalization*

One of the most robust findings in all of psychology is that people alter their views of choices and outcomes in order to feel good about them. To rationalize a decision or outcome, however, one must be both able and motivated to do so, and that is not always the case. Research suggests that irreversible decisions are more likely to be rationalized than reversible decisions because people must be relatively certain of an outcome's occurrence in order to rationalize it. And regrets of action are more likely to be rationalized than regrets of inaction because regrets of inaction are often not salient enough, at least initially, to motivate rationalization processes.

Similarities between the research on reversible and irreversible decisions and the temporal pattern of regret led me to hypothesize that the timing of rationalization is important. After all, why don't people rationalize reversible decisions after the reversible deadline has passed or rationalize regrets of inaction once they become salient enough to be considered life's greatest regrets? I suggest that they are not rationalized eventually *because* they were not rationalized immediately. To explore whether immediate rationalization is necessary for effective attitude change, I prevented participants from immediately rationalizing a choice or outcome and found support for a critical period in four studies (Risen, 2006b). That is, participants who were immediately prevented from rationalizing did not change their attitudes, even after the barrier to rationalization was removed and they had time and mental resources available to do so. In addition, two studies found evidence that the effect is due to both a reduction of the motivation to rationalize and a reduction of the cognitive flexibility necessary for restructuring one's beliefs. I plan to continue exploring the critical period for rationalization to better understand how motivational and cognitive processes are involved in rationalization processes, the prevention of rationalization, and the lasting implications of each.

Papers Cited

Gilbert, D. T., Morewedge, C. K., Risen, J. L., and Wilson, T. D. (2004). Looking forward to looking backward: The misprediction of regret. *Psychological Science*, 15, 346-350.

Risen, J. L. (2006a). Emotion-specific coping strategies: The case of disappointment and regret. In preparation.

Risen, J. L. (2006b). Now or never: Is there a critical period for rationalization? Currently under review at *Journal of Personality and Social Psychology*. Cornell University.

Risen, J. L., & Gilovich, T. (in press). Target and observer differences in the acceptance of questionable apologies. *Journal of Personality and Social Psychology*.

Risen, J. L., & Gilovich, T. (2006a). Another look at why people are reluctant to exchange lottery tickets. Currently under review at *Journal of Personality and Social Psychology*. Cornell University.

Risen, J. L., & Gilovich, T. (2006b) Tempting fate: The effect of negativity and accessibility on judgments of likelihood. In preparation.

Risen, J. L., & Gilovich, T., Dunning, D. (2006). One-shot illusory correlations and stereotype formation. Currently under review at *Personality and Social Psychology Bulletin.* Cornell University.

Risen, J. L., & Gilovich, T., Savitsky, K., & Kruger, J. (2006). Why people fear commenting on success. In preparation.

Risen, J. L., & Gilovich, T., Thaler, R. (2006). Sudden death aversion: Imagining the worse and avoiding it. In preparation.