The Impact of Thinking Style on Sympathetic Magical Thinking

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We investigate the moderating role of consumers’ intuitive thinking style on manifestations of sympathetic magic. We find in a series of studies that beliefs in essence transfer onto products may result in greater willingness-to-pay for consumers with high (vs. low) levels of intuitive processing. Further results show for the first time that achievement is a property capable of being transferred through magical thinking, demonstrating that high (vs. low) intuitive processors perform better on analytic reasoning problems, but only if they believe that their intelligence is malleable. Implications are related to the psychology of superstition and consumer behavior in secondary markets.

[to cite]:


[url]:

http://www.acrwebsite.org/volumes/14327/volumes/v36/NA-36

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Symposium Summary

Moving Beyond the Rabbit’s Foot: Superstition and Magical Thinking in Consumer Behavior

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Session Overview

Merriam-Webster defines superstition as “an irrational belief that an object, action, or circumstance not logically related to a course of events influences its outcome.” While a great deal of established consumer behavior literature has focused on violations of rational choice, superstition is unique in demonstrating that consumers may base their choices on magical thinking, even while recognizing and acknowledging that this is irrational.

As a phenomenon, superstition has tremendous impact in the business world. ABC News reports that people’s reluctance to tempt fate results in loss of $850 million each time a Friday the 13th occurs in the calendar. More personal examples abound; almost half of all collegiate track athletes used some sort of clothing ritual such as “lucky socks” to help their performance (Bleak and Frederick, 1998). From a consumer behavior perspective, individuals who score higher in superstitious belief are more suspicious of genetically modified foods (Mowen and Carlson, 2003), and Taiwanese students were more likely to purchase a portable radio when it was priced at TWD888–8 is lucky in Asian culture—than at the lower figure of TWD777 (Kramer and Block, 2008).

Several psychological paradigms underlay the phenomenon of superstition, although there has been little investigation of these principles as they relate to marketing. First, sympathetic magic (Rozin et al, 2007) encompasses the laws of contagion and similarity. The former states that objects that have been in contact with each other will forever remain linked, even after being physically separated. The latter posits that an item which is related to another by imagery or association may take on properties of the second item. Consistent with the definition of superstition, such beliefs are acknowledged as irrational, but still manage to hold sway over behavior.

The idea of “illusory control” (Wegner and Wheatley, 1999; Wegner, 2002) identifies three principles by which individuals may be tricked into believing that they exert control over an event: priority, consistency, and exclusivity. When an action occurs prior to an outcome, when the outcome is consistent with one’s intent, and when the action is the exclusively available explanation, then one is more likely to believe that he or she caused it to occur. Pronin et al (2006) demonstrated that when individuals insert needles into a voodoo doll, they are more likely to believe that this action caused a headache in an experimental confederate when the confederate previously acted rudely; the outcome (headache in a rude individual) was consistent with subjects’ intent (to hurt the confederate). Again, these beliefs are often recognized as irrational by the same individuals who use these cues to direct their actions.

A culturally ingrained idea that individuals should not “tempt fate” is the third block on which the symposium rests. While there is no rational reason why discussing an uncertain event (or a string of successes) should impact its outcome (or this “hot streak”), there are many examples in which individuals believe that such discussions will bring negative consequences.

Each of the papers in this seminar addresses at least one of these psychological components of superstition in varying ways, but with the common theme that irrational beliefs about sympathetic magic, control, or tempting fate regularly influence consumer behavior, despite being acknowledged as unreasonable by their perpetrators. In Paper 1 (Kramer and Block), individual differences in intuitive processing are examined as a moderator of sympathetic magic. The authors found that college students were more likely to purchase a used textbook from an individual with a high grade-point-average (GPA) than from someone with a low GPA, but only for highly intuitive processors. In a second study, the authors demonstrated that magical thinking can actually impact academic performance. Subjects were given a study guide to prepare for a test, and were informed that the guide had been previously used by other students. Subjects who were highly intuitive processors and who believed that their intelligence was malleable (Dweck et al, 1993) performed better when they believed that the guide had been previously used by high-GPA rather than low-GPA students.

In Paper 2, Hamerman and Johar demonstrated that when conditions were in place for individuals to perceive an ability to control outside events (based on Wegner’s three principles of illusory control), they were more likely to deploy superstition as a purchase strategy. In Study 1, subjects indicated that protagonists were more likely to stay with a non-preferred brand of beer after their alma mater’s performance in a basketball tournament improved, compared to when the team’s performance declined. This difference only occurred when the protagonist was framed as a big fan of the basketball team. In Study 2, subjects engaged in a simulated “Trivia Night” at two hypothetical restaurants. Participants disregarded their existing preferences (based on restaurant quality) and used their trivia scores as a factor in deciding which restaurant to patronize, even though they were explicitly informed that the location of the match had no bearing on their likelihood of scoring well. Despite this result, participants still reported that their score on the trivia quiz was less important than restaurant quality in making their decision. In Study 3, subjects were given Snickers bars while watching their school perform well in an intercollegiate academic competition. When any of the principles of illusory control were violated (e.g., the broadcast was tape-delayed, individuals were not rooting intently for the school), respondents were more likely to switch their preferences away from Snickers at the close of the match.

In Paper 3, Risen and Gilovich examined the idea that “tempting fate” elevates the accessibility of negative outcomes, which in turn increases the perceived likelihood of these outcomes. In one study, a protagonist “tempted fate” by wearing a t-shirt from a university to which he applied; subjects determined that this individual was less likely to be accepted after wearing the t-shirt. In a second study, subjects who were primed with a belief in tempting fate were less optimistic and displayed a lower level of overconfidence in their abilities. A third study indicates that subjects who “tempt fate” by exchanging a lottery ticket for one with new numbers are more likely to purchase insurance against losing the drawing. The presentation also includes a hierarchical cluster analysis that identifies “hubris” and “needless risk” as behavior clusters that are associated with the concept of “tempting fate”.

In Paper 4, Kruger et al extend this research with the idea that commenting on success invites failure. In two studies, they demonstrate that subjects are more likely to predict future negative outcomes for both hypothetical protagonists (Study 1) and themselves (Study 2) after a string of successes has been mentioned compared to when success has not been referenced. Study 3 shows that the mechanism for this phenomenon is a failure to recognize “regression to the mean.” At the precise time when a string of successes is noticed, regression to the mean predicts that events are
likely to begin evening out. As expected, participants believed that an alteration in the background screen of a video game–put in place after a string of successes–made the game more difficult.

Taken together, the four papers investigate how people apply superstitious decision-making strategies in their everyday life, even while acknowledging that these strategies are not rational. In addition to investigating several manifestations of superstition (e.g., tempting fate, inviting failure, conditioned behavior, and culturally ingrained beliefs) across a wide variety of domains, we attempt to demonstrate that superstition and magical thinking have a strong impact on actual behaviors, including consumption.

EXTENDED ABSTRACTS

“The Impact of Thinking Style on Sympathetic Magical Thinking”

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Would you be reluctant to drink juice previously touched by a dead, sterile cockroach? How about eating a piece of chocolate fudge shaped to look like dog feces? Psychologists and anthropologists have studied these and other examples of “sympathetic magical thinking” since the turn of the 20th century (Rozin, Millman, Nemeroff 1986). As the examples illustrate, magical beliefs follow one of two laws of magical thinking. The law of contagion holds that objects that have been in contact (e.g. a cockroach in juice) remain in contact even after being physically separated. The law of similarity states that if items that are related by imagery or association, one item may take on properties of the second (e.g. chocolate dog feces).

Despite acknowledging that magical beliefs are irrational, even well-educated adults fall prey to thinking that touching an object transfers his or her qualities (or “essence”) to it, which subsequently can get passed on to another person (Rozin et al. 2007). However, the effects of magical thinking do not only result in negative attitudes, such as reluctance to consume or touch, but also have positive manifestations. For example, a building at 165 University Avenue in Palo Alto has a reputation for magical qualities, having housed PayPal, Logitech, and Google (Helft 2007), on which the owners capitalize when renting out space. Likewise, objects previously owned by celebrities maintain a distinct price advantage on the secondary market. For example, Pope Benedict’s 1999 Volkswagen recently sold for over $282,000.

Recent work has brought the positive effects of magical thinking into the consumer domain. Argo, Dahl and Morales (forthcoming) show that product evaluations are higher when shoppers believe they have been previously touched by an attractive other. In general, there are only a handful of published studies in marketing that explore contagion in a consumer product domain, and these are all limited to the effects of contagion on attitudes or motivation (Argo, Dahl and Morales 2006, 2008; Morales and Fitzsimons 2007). We extend this literature by demonstrating that magical thinking can have profound effects beyond attitudes and beliefs. In a series of studies, we demonstrate behavioral manifestations of magical thinking, from purchase likelihood intentions to actual increases in performance on reasoning tasks. Importantly, in doing so, we are the first to demonstrate that achievement is a property capable of being transferred through magical thinking. We also contribute to the literature by demonstrating that the impact of magical thinking depends on consumers’ thinking style (Epstein et al. 1996).

Study 1 was a 2 (prior owner’s academic success: high vs. low) x 2 (intuitive processing: high vs. low) design, in which 124 undergraduate subjects were told to imagine that they were majoring in music and were looking for a used textbook for a class at the beginning of the semester. Next, subjects in the high (low) academic success condition were presented with the following ad: “This text is in excellent, like new condition. Great shape, with just a little bit of writing on it. Used it just last semester. Got an A (D) in the class; kept my GPA at 3.98 (2.34). Price: $59.99.” Then, subjects indicated their purchase likelihood, followed by intuitive thinking style measures (?=.83; Epstein et al. 1996). Results showed a significant main effect of prior owner’s academic success (F(1, 120)=12.23, p<.001), which was qualified by the expected thinking style x prior owner’s academic success interaction (F(1, 120)=4.16, p<.05). Planned contrast showed that high intuitive processors were significantly more likely to purchase the textbook from a prior student high versus low academic success [M=6.26 vs. 4.07; F(1, 56)=12.63, p<.001]. However, there were no differences for low intuitive processors.

The objective of Study 2 was to provide evidence that high intuitive processors believe that achievement can be transferred through magical thinking, which would be obtained if the effect depends on perceptions about the malleability of one’s own intelligence. Importantly, we also sought to show the impact of magical beliefs on actual performance. One hundred and sixteen undergraduate students participated in a 2 (thinking style) x 2 (prior users’ success) x 2 (intelligence perceptions) design, were told that the study tested analytical reasoning abilities of undergraduate students, and received two sets of materials. The first set, which constituted the manipulation of prior user’s success, was a study guide to help subjects in term of how to solve the analytical reasoning problems. Subjects were informed that given limited budgets for graduate student research, each study guide was designed for use by multiple respondents to reduce costs. Each study guide ostensibly had been completed by six previous respondents, and that their GPA was either relatively high or relatively low. In fact, there were no previous respondents, and the GPAs had been completed by the experimenters’ research assistants. Subjects wrote down their own GPA, completed ten analytical reasoning problems, followed by thinking style and intelligence perception measures (Dweck, Hong, and Chiu 1993).

Analyses on the number of problems solved correctly yielded a main effect for prior users’ success [M=3.89 vs. 4.71 for the low vs. high GPA conditions; F(1, 106)=5.10, p<.05], and the hypothesized 3-way interaction between thinking style, prior user’s success, and intelligence perceptions; (F(1, 106)=4.35, p<.05. The interaction between prior owner’s success and intuitive processing was significant for those subjects who believed intelligence to be malleable [F(1, 51)=5.75, p<.01] but not for those who believed intelligence to be fixed (F<1). Furthermore, actual performance on the analytical reasoning tasks of high intuitive processors who believed that intelligence was malleable was significantly greater when exposed to the study guide of high versus low prior users’ success [M=5.58 vs. 3.21; F(1, 26)=10.12, p<.001]; however, performance did not differ for low intuitive processors (M=4.21 vs. 4.23; F<1).

“Can Switching Brands Help Your Favorite Team Win the Big Game?”

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A large stream of literature in psychology has demonstrated that individuals are often susceptible to the illusion that they can affect certain events through actions that–by all rational accounts–should have no impact on the event in question. This illusion of control is likely to occur when pre-requisites of priority, consis-
tency, and exclusivity have been fulfilled (Wegner, 2002). Priority states that an action must occur before the event. If an individual orders a beer after watching a football game, he is unlikely to believe that his beverage choice had any impact on the outcome. Consistency is fulfilled when the outcome is consistent with the individual’s intent. If a fan roots hard for his team to win by wearing a “lucky shirt”, he is likely to believe that his wardrobe choice impacted the game only if his team won. Exclusivity holds true when there does not appear to be an alternative explanation. If the first-place team beats a last-place team, someone who roots for the winner could easily attribute the victory to the relative strength of the two teams, rather than to the intensity of his support.

In this paper, we suggest that consumer purchases may be viewed in certain situations as instruments to control an outside event, rather than as an attempt to purchase the “best product for the money” based on an evaluation of item attributes. Therefore, consumers will be said to use “superstitious strategies” to inform their purchase behavior when their perception of control over an outside event influences their buying decisions. We demonstrate that this phenomenon occurs even when individuals are aware that this control is merely an illusion.

In our first study, we examined lay theory beliefs about the use of superstition in purchase behavior. Participants read a hypothetical scenario about an individual who is either a big fan of—or indifferent towards—a basketball team. After ordering a non-favored beer—the favorite brand is temporarily out of stock—the team begins to immediately play either better or worse.

The principle of consistency held true only when the team began to play better (vs. worse) after placing the beverage order. In all conditions, priority and exclusivity were held constant. Therefore, this was a 2x2 between-subjects design, with factors of motivation (fan/not a fan) and consistency (team plays better/worse).

Respondents predicted that avid fans of the basketball team would vary their beer orders based on whether the outcome was consistent with their intent; they were more likely to stay with their non-favored brand when the team played well (vs. poorly). When the protagonist was not a fan, the outcome of the game was not expected to impact their choice.

In a second study, individuals participated in a simulated “trivia night” event that was described as taking place at two separate restaurants that differed in quality. Respondents were explicitly instructed that they had the exact same chance of winning at either establishment. After reporting initial preferences for each restaurant, subjects participated in four rounds of trivia: two at each locale. False feedback was distributed; scores either differed between the two restaurants or were equal at both establishments. For the fifth round, half of the subjects were given the opportunity to earn an additional cash prize by scoring well on the quiz (high motivation condition); all subjects were then asked to re-rate their relative preferences for each restaurant.

The principles of priority and exclusivity were both held constant during this experiment. Those who received scores that differed between locations were considered “high” in consistency, because there was a clear restaurant choice that was consistent with their intentions (to score well on the quiz). The experiment therefore included two between-subjects factors—consistency and motivation—each manipulated at the “high” vs. “low” levels. Subjects’ relative preferences for the two restaurants prior to the practice quizzes—versus after the four practice rounds—served as a within-subjects factor (“time”).

A main effect was discovered for the preference ratings over time. This was qualified by a significant interaction between Time and Consistency: Results suggest that respondents allowed the feedback regarding their performance in the first four rounds (i.e., consistency between intent and outcome) to change their preference of restaurant venue over time, regardless of their level of motivation. However, participants reported that the “score on the trivia quiz” influenced their decision significantly less than “quality of the meal”, “location”, and “ambience”.

In a third study, participants ate Snickers bars while watching what they believed to be either live or tape-delayed updates of their school’s Intercollegiate Quiz Bowl Championship match. During this session, their school performed well. After the updates, the score was either listed as tied (so the outcome was uncertain) or lopsided (the outcome was no longer in doubt). Respondents were then given an opportunity to choose another chocolate (either Snickers or KitKat); the DV was the relative preference for each brand.

Unlike in the previous experiments, the principle of priority was manipulated through live or delayed updates of the match. Consistency was measured based on intensity of rooting interest; the school’s strong performance was most consistent with those who were rooting intently for this to occur. Respondents were thought to be more motivated to impact the match when the score was tied (vs. when it was lopsided). This study is a 2x2 experimental design, with factors of consistency (rooting intensity: high or low), priority (live or time-delayed updates), and motivation (score of the match: close or blowout). An interaction was found between consistency, motivation, and priority, suggesting that when any pre-requisite for illusory control is met, individuals believe that they can impact the outcome of an outside event through their purchase behavior.

Taken together, these studies suggest that superstition is regularly deployed as a strategy during purchase decisions in order to impact the result of outside events. This occurs even as its users admit that the idea of such control is irrational.

“Causes and Consequences for the Belief in Tempting Fate”
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It is an irony of the post-Enlightenment world that so many people who don’t believe in fate refuse to tempt it. Whether due to culture, age, or stress, the magical thinking literature has traditionally stressed deficits in cognitive capacities. We contend that a complete understanding of magical thinking requires that one not only understand why the absence of cognitive capacities gives rise to magical beliefs, but also why the presence of certain psychological tendencies gives rise to magical beliefs among intelligent, emotionally-stable adults, well versed in the rules of logic.

The studies presented here provide evidence for an unexplored magical belief—the belief that it is bad luck to tempt fate. First, we demonstrate that people have the intuition that tempting fate will increase the likelihood of a negative outcome. Second, we argue 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. Finally, we demonstrate that when the belief in tempting fate is made salient, people avoid the types of behaviors that are thought to tempt fate.

In order to document the magical belief, Study 1 used a between-participant scenario and measured subjective likelihood. The protagonist (“Jon”) either tempted fate by being overly confident and presumptuous about the future or did not. We find that people are more likely to predict a negative outcome when fate has been tempted than when it has not. Specifically, participants be-
lieved that Jon was more likely to be rejected from Stanford if he wore a Stanford t-shirt while waiting for the school’s decision than if he stuffed the shirt in a drawer while waiting.

Study 2 used the same scenario to test whether negative outcomes are more accessible following behaviors that tempt fate and whether accessibility predicts likelihood judgments. Participants were asked to read stories on the computer and indicate as quickly as possible whether a one-sentence ending made sense or whether it was a non sequitur. If the ending made sense, they rated the likelihood of the ending. Replicating Study 1, we found that participants who read that “Jon” wore the t-shirt thought he was more likely to be rejected than participants who read that he did not tempt fate. In addition, the rejection ending was more accessible for those who read that he tempted fate, and accessibility mediated likelihood judgments.

Studies 3 and 4 were designed to examine the conceptual structure of this culturally-shared belief and to examine how the notion of tempting fate can influence behavior. In Study 3, we find using hierarchical cluster analysis that “hubris” and “needless risk” composed the initial behavior clusters associated with the term tempting fate. In Study 4, we find that when people are primed with the shared belief in tempting fate, they avoid those behaviors associated with the belief. For example, we find that after participants filled out a tempting fate scale, they displayed less presumptuousness and hubris compared to those not primed; they made less optimistic predictions for their future and less over-confident claims about their traits and abilities. The tendency to “restrain” displays of hubris was similar for those who indicated an explicit belief in tempting fate and those who did not.

Although the belief in tempting fate is typically considered an example of irrational, superstitious thinking, this work suggests that this “irrational” belief results from very basic cognitive processes and may promote positive, pro-social behaviors such as humility and moderation.

“Why Calling Attention to Success Seems to Invite Failure”
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Jane Risen, University of Chicago, USA
Thomas Gilovich, Cornell University, USA
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“Bragging about one’s good fortune is to invite misfortune. To say, ‘I haven’t had a cold all winter’ is to wake up the following day snuffling.”
—Ferm (1959/1989)

Calling attention to an ongoing streak of success is widely believed to invite failure. Commenting on a “no-hitter” before a baseball game is over, for example, is thought to “jinx” the pitcher and undermine his success. Recalling his legendary no-hitter in the 1956 World Series against the Brooklyn Dodgers, New York Yankees pitcher Don Larson noted that “Nobody would talk to me, nobody would sit by me, like I had the plague…. Some of the guys didn’t want to say anything, afraid they’d put a jinx on it” (Aubrecht, 2002).

The present research empirically documents and partially explains this superstition. In Study 1, participants read one of three hypothetical scenarios about two lucky individuals or groups of individuals: two gamblers who had each won six consecutive hands of blackjack, two sports car owners who had each managed to avoid hail damage to their treasured vehicles, or two rainforest expeditions that had each avoided snakebites, mudslides, and a variety of other dangers lurking in the jungle. In one version of the scenarios, the streak of luck was pointed out by someone (the casino dealer, the car-owner’s wife, or the expedition guide), and in the other it was not. As expected, participants indicated that the streak was more likely to come to an end if it was verbally mentioned than if it was not.

Study 2 examined the superstition in a non-hypothetical situation involving real behavior. Participants played a series of gambles, with the outcomes determined by drawing from three urns ostensibly made up of winning (blue) and losing (yellow) pieces. The experimenter explained that he would draw three times from the first urn, twice from the second urn, and once from the third urn, and that the number of winners and losers drawn would determine the participant’s final payment.

Participants were given a form to keep track of the outcome of each draw and to estimate the composition of the urns. After making sure that participants understood the rules, the experimenter started to draw pieces from the first urn. Unbeknownst to participants, the urns contained exclusively winning (blue) pieces. After drawing 3 winning pieces from the first urn and 2 winning pieces from the second urn, he either commented on the streak by saying, “Wow, that’s five in a row. You’re on quite a streak. If this keeps up, you could win more money than anyone else,” or he did not comment on the streak and simply said, “Blue.” After making their estimates about the composition of the final urn participants were given the option of having the experimenter draw from the third urn or having the experiment end without the final draw. The experimenter explained that if participants stopped, they would leave with $4. If they continued, they would earn $6 if a blue piece were drawn and $2 if a yellow piece were drawn.

As expected, when the experimenter verbally noted participants’ streak of five consecutive wins, participants expressed less confidence that they would win on the sixth trial and thought the objective odds of winning were less in their favor. As well, they were more likely to take the experimenters offer to stop playing and take a sure $4 rather than risk losing (or gaining) $2 by drawing from the third and final urn.

What causes the superstition? One possibility is a misunderstanding of regression to the mean. Because calling attention to success by definition only occurs after a run of good fortune, subsequent performance is likely to regress towards the overall mean. Commenting on a pitcher’s ongoing perfect game, for instance, is likely to be followed by someone getting on base in the next inning—not because the pitcher has been cursed, but because teams, on average, get at least one person on base in most innings. More generally, comments about on-going success are correlated with diminished outcomes because exceptional performance at one period (which tends to elicit such comments) is followed, on average, by less exceptional performance the next. To the extent that people mistake this correlation for cause, the superstition is borne.

Study 3 was designed to test this explanation by creating a novel superstition in the lab. Participants played numerous rounds of a simple videogame. Unbeknownst to them, the outcome of each trial was random—that is, $p(success)=p(failure)=.5$. In addition, the background of the game changed after three hits, which, given the number of trials involved and the probability of a hit, was virtually guaranteed to occur at least once for each participant. Also, virtually guaranteed was the fact that, on average, this change in background would be associated with a relative decline in performance, since a run of three hits in a row is unlikely to be followed by a similarly successful streak. We then asked participants to describe what influence, if any, the background had on the difficulty of the game (as well as a control background that occurred after
three misses). Despite the fact that outcomes were unrelated to the background (i.e., the probability of a hit on a particular trial was .5 regardless of the background), we found that participants tended to view the background that appeared after a string of hits as a bad omen. Of key importance, participants not only thought that the background change tended to be followed by a decrease in performance (which it did), but that it caused that decrease in performance (which it did not).

Taken together, this research suggests that people believe that calling attention to success is bad luck, and traces the superstition to a misunderstanding of statistical regression (sometimes known as the regression fallacy). Discussion focuses on the scope and everyday implications of these findings.

REFERENCES


