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Lady Luck: Anthropomorphized Luck Creates Perceptions of Risk-Sharing and Drives Pursuit of Risky Alternatives

KATINA KULOW, THOMAS KRAMER, AND KARA BENTLEY

ABSTRACT We examine decision-making under risk as a function of the degree to which consumers anthropomorphize their luck. We propose that consumers make riskier financial decisions when they anthropomorphize (vs. objectify) their luck and that this effect occurs because humanizing luck engenders a perceived sharing of risk in the presence of “lady luck.” A series of experiments shows that consumers among whom anthropomorphized versus objectified luck is salient display greater risk-taking in financial, but not social, decisions. These effects are heightened among consumers who frequently engage in risky decision-making and are driven by perceptions of risk-sharing produced by anthropomorphized luck. Collectively, these findings document how anthropomorphizing luck can influence consumers’ decision-making within the financial domain. We discuss important consumer welfare implications associated with the negative consequences that result from repeated detrimental consumer behaviors, particularly given the pervasive use of anthropomorphized luck by marketers in the gambling domain.

For a change, lady luck seemed to be smiling on me. Then again, maybe the fickle wench was just lulling me into a false sense of security while she reached for a rock.

—Timothy Zahn

For better or worse, the uncertainty inherent in financial decision-making engenders risk. Investing in relatively risky stocks versus safer bonds can generate great gains, but—as most recently demonstrated by the March 2020 stock market declines—can also result in devastating losses. Further, consumers regularly have to choose between spending money in the present for immediate pleasure versus delaying gratification and saving for the future. All too often, such consumer decisions result in harmful behaviors, including excessive and uncontrolled buying (O’Guinn and Faber 1989; Dittmar 2005), addictive buying (Scherhorn, Reisch, and Raab 1990), or compulsive gambling (Cherkasova et al. 2018). Consistent with research documenting the implications of maladaptive consumption related to interactions with belongings (Rifkin and Berger 2021) and the pursuit of perfectionism (Chang, Jain, and Reimann 2021), maladaptive consumption behaviors in the financial domain

can also have severe implications for consumer welfare, such as emotional turmoil and depression (Richardson, Elliott, and Roberts 2013), bankruptcy (van Ooijen and van Rooij 2016), interpersonal conflicts and increased divorce rates (Dingfelder 2008), and illicit drug use (Sinha 2009). Unfortunately, the negative consequences of risky financial decisions appear widespread. For example, 23% of respondents in a recent financial health survey reported experiencing finance-related posttraumatic stress disorder (Ashford 2016). Further, 51% of working adults have minimal savings to cover expenses beyond one missed paycheck (Passy 2019), illustrating the precarious financial situation many consumers are in. Simply put, risky financial decisions have significant repercussions for consumer welfare.

Extant research on potential influences on financial decision-making has investigated psychological factors, including sensation-seeking (Zuckerman and Kuhlman 2000)

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and beliefs toward money (Sekścińska 2015), and situational factors, such as one's presence in online communities (Zhu et al. 2012) and feelings of social exclusion (Duclos, Wan, and Jiang 2013). The current research seeks to add to this stream of literature by proposing a novel antecedent to consumers' pursuit of riskier over safer financial alternatives: their propensity to anthropomorphize luck. Specifically, risk-seeking tends to be greater among consumers who are in the presence of others that can provide a sense of security (Chou and Nordgren 2017), and anthropomorphized luck—often referred to as lady luck—may represent the presence of such a person who not only provides a sense of security, but also shares the risk associated with the decision. Thus, we argue that increased accessibility of anthropomorphized (vs. objectified) luck can lead consumers to be more likely to pursue higher-risk alternatives. Further, we propose that preferences for higher-risk options are driven by shared risk perceptions that—as illustrated by the introductory quote—might engender feelings of security provided by lady luck.

Consistent with our proposition, four studies find increased preferences for higher- over lower-risk alternatives when consumers anthropomorphize (vs. objectify) luck for financial, but not social, decisions. We further show that the anthropomorphizing of luck results in riskier decisions among those who more (vs. less) frequently engage in risky decisions—which bodes ill for consumer welfare, given that many financial maladaptive activities arise from repeated behaviors. Finally, we suggest that the effect of anthropomorphizing luck on risk-seeking behavior is guided by shared risk perceptions produced by anthropomorphized luck, but not by objectified luck, thereby presumably lessening the risk borne by the decision-maker.

Our research makes several contributions to the literature. While research has found evidence for the role played by both psychological and situational factors in determining risk-taking, we extend the literature by identifying a novel and seemingly innocuous antecedent to consumer decision-making: the anthropomorphizing of luck. Further, we generalize prior research on the impact of social influences on risk-taking (Levav and Argo 2010) from the actual or perceived presence of physical entities to the mere presence of anthropomorphized non-human entities: lady luck. By documenting the negative effects of anthropomorphized luck on financial decision-making, our findings also hold significant public policy implications. Specifically, we demonstrate that the anthropomorphizing of luck in messaging associated with financial decisions may unintentionally lead to riskier decisions that could have long-term implications for consumers' financial and psychological welfare.

THEORETICAL DEVELOPMENT

Uncertainty and Lack of Control

Uncertainty about probable outcomes for a decision that has not yet occurred engenders decision risk (Sitkin and Weingart 1995). As such, risky decisions represent contexts in which possible outcomes generally fall outside of one's control. And yet, the mere perception of having control has been shown to greatly influence consumer decision-making under risk, such that greater perceived control leads to greater risk-taking (Renn 1998), while a loss of control shifts preferences toward less risky alternatives (Beisswingert et al. 2016). Although consumers may try to increase control through means such as taking charge of their emotions (Heilman et al. 2010) or relying on superstitious beliefs (Kramer and Block 2008), the uncertainty inherent in risky decisions may also drive consumers' attempts to increase control not only by thinking of luck (Langer 1975) and the degree to which they believe it to be under their personal control (Darke and Freedman 1997), but also by anthropomorphizing it (Epley, Waytz, and Cacioppo 2007).

Uncertainty and Luck

Luck is often conceptualized as an uncontrollable, unstable external force (Darke and Freedman 1997), used to attribute outcomes related to chance events (Teigen 1996). Even though luck tends to be viewed as an unpredictable external force, research has found that individuals differ in their beliefs about luck—such that some view luck as an external force that randomly influences events, while others believe that luck is akin to an internal quality that one can possess and control (Darke and Freedman 1997). Although consumers may differ with respect to how they believe luck operates, the idea of luck as an influence on chance events is ubiquitous.

Luck has been shown to have significant implications for consumers. For example, priming consumers with luck-related concepts, which temporarily changed how lucky they felt, positively influenced both their participation in and estimates of winning a lottery (Jiang, Cho, and Adaval 2009). Further, consumers rely more on luck, such as an increased preference for lucky items and greater confidence when using lucky items, in the pursuit of performance (vs. learning) goals (Hamerman and Morewedge 2015). Responses to uncertainty and risky decisions are also subject to cultural influences. For instance, whereas North American (vs. Asian) consumers engage in riskier decision-making when a positive event raises their self-esteem, Asian (vs. North American) consumers become more risk-seeking as their belief in good luck strengthens (Valenzuela, Darke, and Briley 2014).

Financial decisions and their chance outcomes are marked by a lack of control, which increases the likelihood that luck is brought to mind (Broncano-Berrocal 2019). Specifically, for luck to be evoked, decision outcomes must be personally relevant, unlikely, unpredictable, and fall outside of the individual's control (Coffman 2007)—all of which are often characteristics of financial decisions. The notion of consumers seeking to exert influence over randomly determined outcomes suggests that luck is evoked to provide an illusion of control—"an expectancy of a personal success probability inappropriately higher than the objective probability would warrant" (Langer 1975, 313). Two fundamental errors contribute to this illusion: people incorrectly believe that a chance event can be controlled and that they not only possess, but can effectively employ, the ability to influence its outcome. For instance, Langer (1975) observed that participants reported higher resale amounts for lottery tickets they chose themselves, compared to participants who were merely given lottery tickets. Similarly, Wohl and Enzle (2002) found that the majority (88%) of participants in a ping pong ball drawing for a \$20 gift certificate elected to pick their own ball, rather than being given one.

Thus, risky financial decisions often meet the criteria of when luck might be more readily accessible—they are likely to be viewed as highly personally relevant, with unpredictable and uncontrollable outcomes. Interestingly, the situational factors that lead to the evocation of luck to exert control also increase the likelihood of individuals' attempting to control or make sense of situations via anthropomorphism.

Uncertainty and Anthropomorphism

In contexts marked by uncertainty, consumers not only resort to the invocation of luck (Langer 1975), but also to anthropomorphism (Kim and McGill 2011). Anthropomorphism refers to the ascribing of human characteristics, intentions, and behaviors to nonhuman entities (Epley et al. 2007), such as inanimate objects (Chandler and Schwarz 2010). Research has documented that consumers anthropomorphize as a means to achieve two types of goals (Epley et al. 2007)—social goals that reflect their need for social connection and belonging, or—importantly—effectance goals that indicate a desire to understand their environment, which can be achieved through gaining a sense of control over it (White 1959). For example, Epley and colleagues (2008) demonstrated that participants who had a high, as compared to low, desire for control were more likely to anthropomorphize a smaller dog whose actions were quick and unpredictable versus a larger, slower, and more predictable dog. Similarly, research in gambling con-

texts has shown that frequent gamblers are more likely to anthropomorphize slot machines (Riva, Sacchi, and Brambilla 2015). Further, consumers who feel powerful believe they can use that power to control anthropomorphized slot machines and experience lower levels of risk, thereby making them more likely to play the slot machines (Kim and McGill 2011). As we discuss next, consumers may also anthropomorphize luck itself, and such anthropomorphized luck can increase risk-seeking by providing a sense of security.

Anthropomorphized Luck and Shared Risk

Consumers differ in their level of risk tolerance (Gibson, Michayluk, and Van de Venter 2013) and social factors can have a strong influence on risk preferences (Zhu et al. 2012; Duclos et al. 2013). In particular, the presence of other people has been shown to lead to an increase (i.e., the risky shift) in individuals' inclination to choose riskier options (Wallach, Kogan, and Bem 1962; Stoner 1968). Even the mere presence of others leads to riskier decision-making because other people can increase feelings of security (Chou and Nordgren 2017). The latter finding is consistent with the cushion hypothesis (Weber and Hsee 1998), which posits that individuals from a collectivistic (vs. individualistic) society are more likely to engage in riskier financial decision-making because of their network of others (i.e., friends, family, community) available to help if needed by providing a financial cushion. This sense of support from others, which includes membership in online communities, both real and imagined, has also been shown to increase consumers' choice of riskier financial options (Zhu et al. 2012).

Thus, the presence of others can increase feelings of security, consequently leading to riskier decisions. Importantly, anthropomorphized entities are often ascribed essential human characteristics, such as a human-like mind capable of rational thought (Gray, Gray, and Wegner 2007), and they also facilitate emotional bonding (Kim and McGill 2011) and produce cooperation (Kiesler and Goetz 2002). Thus, and consistent with Bixter and Luhmann (2014), it is possible that anthropomorphized entities may also create the perception that they share the risk present in a decision, akin to those produced by human entities. Therefore, we anticipate that anthropomorphized (vs. objectified) luck increases preference for higher-risk financial alternatives, and that this effect is guided by shared risk perceptions. Further, the effect of anthropomorphism on risk-taking should be observed for decisions to be made alone, but attenuated for shared decisions in which feelings of security can be provided by the presence of other people.

We test our propositions in four studies. Data exclusions were based on a common set of screeners; namely, we removed participants who failed attention checks (see appendix; apps. 1–4 are available online) or whose responses were outliers (± 3 SD) with respect to time spent on the decision. We controlled for gender in our analyses given gender differences in risk-taking (Charness and Gneezy 2012).

STUDY 1

The objectives of study 1 were threefold. First, to explore if some consumers spontaneously anthropomorphize luck, we measured consumers' propensity to anthropomorphize luck; subsequent studies manipulate this construct. Second, we sought to examine shared risk perceptions as the underlying driver of the effect. Third, we wanted to examine an alternative explanation based on differences in feelings of hopefulness (Darke and Freedman 1997) engendered by anthropomorphized versus objectified luck.

Method

One hundred and fifty MTurk panelists (49% male, $M_{\text{age}} = 40.87$, $SD = 12.50$) completed an online study, which consisted of a one measured factor (i.e., consumers' propensity to anthropomorphize luck). Participants were informed that they would be asked to complete several unrelated studies, the first of which involved a financial risk decision (Duclos et al. 2013). They then read the following brief definition of financial capital: "Financial capital is defined as the amount of money that you have earned and at your disposal. Financial capital can be quantified in dollars, such that the more dollars you accrue, the more financial capital you possess." Next, they were asked to imagine that they had financial capital of \$100 but had the opportunity to potentially increase it through a lottery. After that, they were given two lottery options—Lottery A had an 80% chance of winning \$500 and a 20% chance of winning nothing (i.e., low-risk option), and Lottery B had a 20% chance of winning \$2,400 and an 80% chance of losing \$100 (i.e., high-risk option)—and were asked to indicate their relative lottery preference (1 = Lottery Option A, 9 = Lottery Option B).

Next, we assessed shared risk perceptions with the following two items (1 = not at all, 9 = very much; $r = .89$): "To what extent did you feel like the financial risk was shared with others;" and "To what extent did you feel like the financial risk was a shared responsibility." To examine an alternative explanation based on feelings of hopefulness, suggesting that anthropomorphized versus objectified luck renders consumers more hopeful and thereby changes their risk prefer-

ences, we also measured the extent to which participants felt hopeful (1 = not at all, 9 = very much). Finally, participants responded to five items adapted from Waytz, Cacioppo, and Epley (2010) that measured participants' propensity to anthropomorphize luck, which included items such as "To what extent does luck have intentions?" (0 = not at all, 10 = very much; $\alpha = .90$; see app. 1). Ten participants who failed an attention check, two participants whose time spent on the financial risk scenario exceeded three standard deviations from the mean ($M = 33.96$ seconds), and one participant whose propensity to anthropomorphize luck score exceeded three standard deviations from the mean ($M = 3.17$) were excluded, resulting in a final sample of 137 participants.

Results

We conducted a regression analysis, including gender as a covariate. As expected, regressing participants' propensity to anthropomorphize luck on relative risk preference while controlling for gender yielded a significant simple effect ($b = .25$, $t = 3.81$, $p < .001$), such that greater likelihood of anthropomorphizing luck was positively associated with preference for the riskier option (i.e., Lottery B). To examine the mediating role of shared risk, we used Model 4 from PROCESS (Hayes 2013). Bootstrapping involving 10,000 resamples from the data revealed that the effect of participants' propensity to anthropomorphize luck on their relative financial risk preference was mediated by perceptions of shared risk ($b = .05$, $SE = .03$; 95% CI [.0018, .1295]). A follow-up analysis with the inclusion of hopefulness as a parallel mediator yielded only the mediating effect of perceptions of shared risk ($b = .05$, $SE = .03$; 95% CI [.0023, .1322]), but not hopefulness ($b = -.002$, $SE = .008$, 95% CI [-.0238, .0091]).

Discussion

As hypothesized, study 1 confirmed a positive association between consumers' propensity to anthropomorphize luck and greater financial risk-taking, and that such decisions are driven by shared risk perceptions. This result is consistent with our proposition that evoking the mere anthropomorphizing of a nonhuman entity (i.e., lady luck) increases risk-seeking by providing a sense of security in contexts with uncontrollable outcomes. Further support for this explanation would be provided if the anthropomorphizing of luck no longer shifted preferences to riskier alternatives as perceived control over the decision outcome increases. In particular, risky decisions are not confined to the financial domain—for example, consumers are often faced with decisions that involve social risk,

such as those that can lead to social exclusion (Mandel 2003) or affect their social standing among peers or coworkers (Schultz and Moore 1986). However, in contrast to the financial domain in which outcomes are likely seen as determined by chance, consumers may perceive that they have more control over outcomes in the social domain and, therefore, feel less in need of the security provided by an anthropomorphized entity. Thus, our next study examines risk domain as a moderator to the effect of anthropomorphized luck on risky decision-making, such that the increased preference for risky alternatives when luck is anthropomorphized versus objectified should be observed for risks in the financial, but not social, domain.

STUDY 2

Method

One hundred and ninety-six Mturk panelists (41% male, $M_{\text{age}} = 37.06$, $SD = 11.79$) completed a study that consisted of a 2 (luck: objectified vs. anthropomorphized) \times 2 (risk domain: financial vs. social) between-subjects design. Participants were informed that they would complete an initial study to gauge writing ability; those in the anthropomorphized luck condition were asked to describe luck as if it had come to life, whereas their counterparts in the objectified luck condition simply were asked to describe luck (adapted from Aggarwal and McGill 2012; see app. 2a for a pretest of the manipulation).

In an ostensibly unrelated study, participants were then randomly assigned to make an investment decision in either the financial or social domain, which involved investing financial capital or social capital. Those in the financial risk condition were provided with a definition of financial capital as in study 1, whereas those in the social risk condition received the following definition of social capital: "Social capital is defined as the amount of goodwill, trust, and influence that you have earned and at your disposal, particularly in the workplace. Social capital can be quantified in points, such that the more points that you accrue, the more social capital you possess."

Participants were then presented with a risky decision adapted from Kupor, Liu, and Amir (2018). Those in the financial (social) risk condition read that they had up to \$100 (100 social capital points) to invest in a potential high-risk opportunity that had a 10% chance of success, but that could yield 20 times their investment. If the investment failed, however, they would lose the entire investment amount. We pretested the two scenarios with a separate sample of 103 Mturk participants (41% male, $M_{\text{age}} = 38.63$, $SD = 12.54$; see app. 2b). Results showed that perceived risk inherent in the

decision did not differ between the financial and social risk scenarios ($M = 6.08$, $SD = 1.30$ vs. $M = 5.78$, $SD = 1.22$; $F(1, 100) = 1.40$, $p = .24$); however, participants in the social risk condition felt they could control the decision's outcomes to a greater extent than those in the financial risk condition ($M = 2.90$, $SD = 1.34$ vs. $M = 2.24$, $SD = 1.26$; $F(1, 100) = 6.65$, $p = .01$).

Participants in the main study were then instructed to indicate the investment they wanted to make (0–100), followed by manipulation checks assessing the extent to which their investment involved financial risk and the extent to which their investment involved social risk (1 = not at all, 7 = very much). Finally, they provided demographic information. Twelve participants who failed an attention check and three participants whose time spent on the financial risk scenario exceeded three standard deviations from the mean ($M = 33.96$ seconds) were excluded, resulting in a final sample of 181 participants.

Results

Analyses of the manipulation checks showed that our risk domain manipulation was successful (see app. 2d). Next, a two-way ANCOVA with investment decision as dependent variable, luck condition and risk domain as independent variables, and gender as covariate yielded a main effect of the gender covariate ($F(1, 176) = 8.0$, $p = .005$), and more importantly, a significant luck \times risk domain interaction ($F(1, 176) = 5.59$, $p = .02$; see fig. 1). In particular, and consistent with our expectations, within the financial risk condition, participants made riskier financial decisions following the evocation of anthropomorphized versus objectified luck ($M = 43.63$, $SD = 30.25$ vs. $M = 33.42$, $SD = 27.0$,

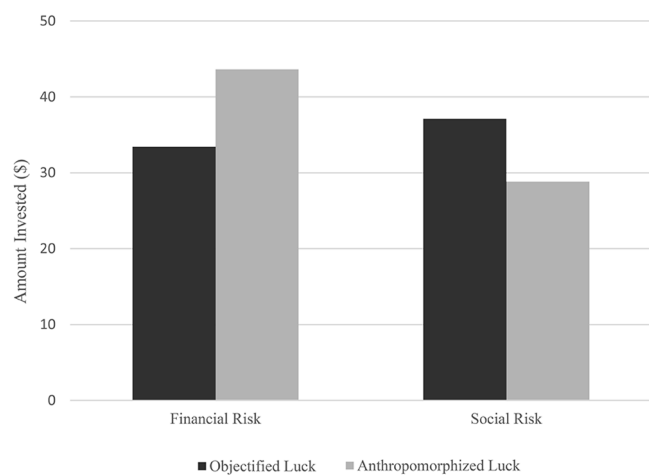


Figure 1. Study 2: Effect of risk domain on preference on investment amount as a function of luck type.

respectively; $F(1, 176) = 3.51, p = .06$). On the other hand, participants in the objectified ($M = 37.11, SD = 26.42$) versus anthropomorphized ($M = 28.83, SD = 20.63$) luck condition made marginally greater social risk investments ($F(1, 176) = 2.67, p = .10$). Further, and indicating that shared risk perceptions provided by anthropomorphized luck are domain-specific, participants in the evoked anthropomorphized luck condition risked significantly more financial than social capital ($M = 43.63, SD = 30.25$ vs. $M = 28.83, SD = 20.63$, respectively; $F(1, 176) = 7.11, p = .008$). There were no differences in investment allocation in the objectified luck condition between the financial and social risk decisions ($M = 33.42, SD = 27.01$ vs. $M = 37.11, SD = 26.42$, respectively; $F(1, 176) = .49, p = .49$).

Discussion

Study 2 once again demonstrated that participants who evoked anthropomorphized versus objectified luck engaged in riskier financial decisions. On the other hand, and consistent with our theory, this effect was eliminated (i.e., marginally reversed) when making investments in a social context. Of course, even for decisions involving financial risk, relying on lady luck to share one's risk is unlikely to be uniform among consumers. Given that maladaptive behaviors related to financial risk, which include gambling and compulsive spending, are suggestive of actions that result from repeated, escalating occurrences (Black 2007), such continuous exposure likely heightens the need for an increased sense of control and security. Indeed, prior research has shown that frequent (vs. infrequent) gamblers displayed more irrational thinking toward gambling choices (Ladouceur et al. 1988) and demonstrated more superstitious beliefs related to winning and controlling chance outcomes (Moore and Ohtsuka 1999). Because of this positive relationship between the increased need for control and frequent gambling (Griffiths 1990), individuals who frequently engage in risky decisions should be more likely to employ anthropomorphized luck as a strategy that offers an illusion of control. Thus, we expect that the anthropomorphism of luck should have a greater effect for those who engage in risky decision-making more (vs. less) frequently.

STUDY 3

Method

Four hundred and thirty-eight Mturk participants (52% male, $M_{age} = 36.16, SD = 22.87$) completed a study that consisted of one manipulated factor (luck: anthropomorphized vs. objectified vs. control) and one measured factor (frequency of

engaging in risky decisions, continuous). Similar to prior studies, participants were first introduced to a writing assessment that provided the cover story for the luck evocation manipulation, and were randomly assigned to one of three luck conditions, such that they either wrote about luck as a person (anthropomorphized condition), luck (objectify condition) or their typical day (control condition).

All participants were then shown a financial risk scenario. They were asked to imagine that they had \$100 and had been presented with an opportunity to increase their financial capital and could choose between the following two lottery options: Lottery A with an 80% chance of winning \$500 and a 20% chance of winning nothing (i.e., low-risk option) and Lottery B with a 20% chance of winning \$2,400 and an 80% chance of losing \$100 (i.e., high-risk option). Participants then indicated their relative preference between the two options on a nine-point bipolar scale (1 = Lottery A, 9 = Lottery B). Finally, they reported how often they engage in risky decisions (1 = never, 7 = very frequently) and demographic information. Fifty-one participants who failed an attention check embedded within the study, and three participants whose time spent on the financial risk scenario exceeded three standard deviations from the mean ($M = 29.69$ seconds) were excluded, resulting in a final sample of 384 participants.

Results

We conducted a regression with relative lottery preference as dependent variable, luck condition (coded as a multicategorical variable) and risk frequency and their interaction as independent variables, and gender as covariate. Following Hayes and Preacher (2014)'s suggestion regarding multicategorical independent variables, we created two dummy variables, $X1$ and $X2$, representing the objectified luck and the control conditions, respectively. Therefore, all conditions were retained in the initial analysis. The first contrast compared the anthropomorphized luck condition to the objectified luck condition. The second contrast compared the anthropomorphized luck condition to the control condition. Overall, we found a simple effect of frequency of engaging in risky decisions ($b = .96, t = 6.51, p < .001$), and simple effects of luck in the first contrast ($b = -.51, t = -1.92, p = .056$) and second contrast ($b = -.74, t = -2.78, p = .006$), and as hypothesized, a luck \times frequency interaction in both the first ($b = -.42, t = -2.21, p = .03$; see fig. 2A) and second ($b = -.56, t = -3.04, p = .003$; see fig. 2B) contrasts.

Next, we conducted spotlight analyses (± 1 SD from the mean [$M = 3.58$]) at high and low levels of risk frequency.

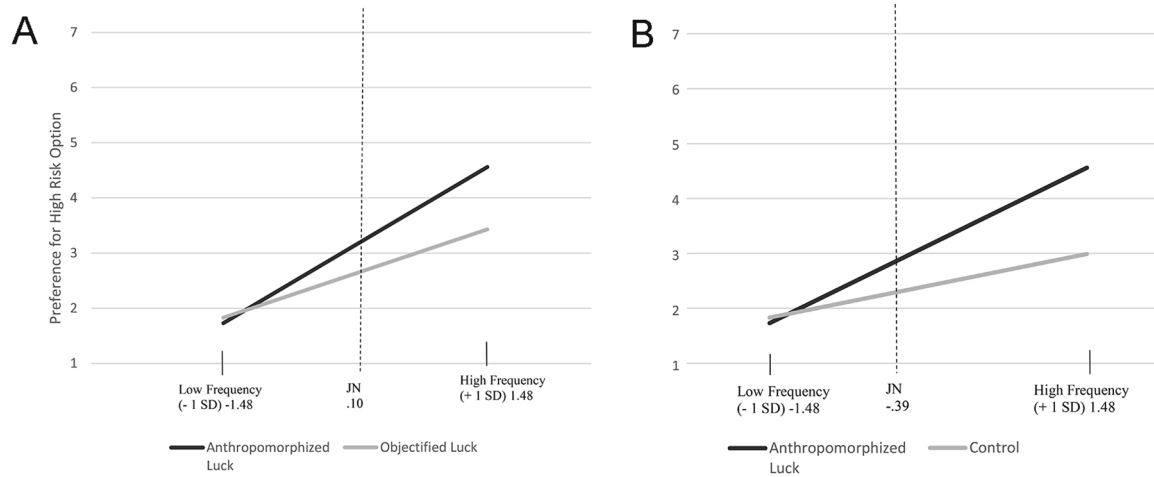


Figure 2. A, Study 3: Effect of frequency of engaging in risky decisions on preference for high financial risk option as a function of luck type. B, Study 3: Effect of frequency of engaging in risky decisions on preference for high financial risk option as a function of luck type.

Among participants who frequently engaged in risky decisions (+1 SD), those in the anthropomorphized luck condition indicated a greater preference for the high-risk lottery option ($M = 4.56$) compared to those in either the objectified luck ($M = 3.43$, $b = -1.13$, $t = -2.88$, $p = .004$) or control ($M = 2.99$, $b = -1.57$, $t = -4.19$, $p < .001$) conditions. However, among participants who engage in risky decisions only infrequently (-1 SD), there were no differences in relative lottery preference between the anthropomorphized luck condition ($M = 1.73$) compared to those in the objectified luck condition ($M = 1.83$, $b = .10$, $t = .27$, $p = .79$) or the control condition ($M = 1.83$, $b = .03$, $t = .26$, $p = .80$).

Additional analyses were conducted comparing the anthropomorphized luck condition to the objectified luck and control conditions separately. When examining the anthropomorphized versus objectified luck conditions, a floodlight analysis using Johnson-Neyman tests revealed a significant effect of evoked luck on relative lottery preference at frequency of risky decision scores greater than .10 ($b_{JN} = -.53$, $SE = .27$, $p = .05$). Participants who frequently engaged in risky decisions (above .10) reported a greater preference for the high-risk option when luck was anthropomorphized (vs. objectified). A second analysis examined the anthropomorphized and control conditions; the resulting floodlight analysis found a significant effect of luck on relative lottery preference at frequency of risky decision scores greater than $-.39$ ($b_{JN} = -.27$, $SE = .14$, $p = .05$). Once again, participants who frequently engage in risky decisions (above $-.39$) reported a greater preference for the high-risk option when luck was anthropomorphized (vs. control).

Discussion

Results from study 3 provided evidence that while the anthropomorphizing of luck can lead to an increased preference for high-risk financial alternatives, its detrimental impact is more pronounced for individuals who frequently (vs. infrequently) engage in risky decision-making. Given that maladaptive financial behaviors often result from repeated decisions within a given domain, the increased deleterious impact on consumers' preferences for high-risk alternatives suggests that it can further contribute to such maladaptive behaviors. Our final study seeks to provide additional evidence of perceived risk-sharing provided by lady luck guiding the observed increase in high-risk choices by employing a mediation by moderation design (Spencer, Zanna, and Fong 2005). We expect to replicate the effect of anthropomorphism on risk-seeking in the absence of others who might provide feelings of shared risk, but not when the decision is made jointly with others who can share the risk inherent in the decision.

STUDY 4

Method

Two hundred and thirty-three undergraduate students (56% male, $M_{age} = 20.56$, $SD = 3.48$) from a large US university completed this study for course credit. The study consisted of two manipulated factors (luck: anthropomorphized vs. objectified; risk: individual vs. shared) and one measured factor (frequency of engaging in risky decisions, continuous). Participants were randomly assigned to a scenario that involved either an individual or shared risk (adapted from He, Inman, and Mittal 2008). Specifically, they were

asked to imagine that they had been working in corporate for the past five years since graduation, and while they enjoyed their career, they had always known that eventually they would like to be self-employed. As a result, they had been saving funds to eventually invest and currently had \$5,000. Next, those in the individual risk condition were told that they had decided to invest in a local start-up business as a first step, whereas those in the shared risk condition were told that they and three friends from college had decided to invest in a local start-up business as a first step, together investing \$20,000. A pretest with 83 Mturk participants (46% male, $M_{age} = 41.47$, $SD = 12.55$; see app. 4a) revealed feeling more supported in the shared versus individual risk condition ($M = 4.66$, $SD = 1.08$ vs. $M = 4.05$, $SD = 1.50$, respectively; $F(1, 80) = 4.30$, $p = .04$). They also felt that risk was shared with others to a greater extent in the shared versus individual risk condition ($M = 5.39$, $SD = 1.48$ vs. $M = 2.87$, $SD = 1.61$, respectively; $F(1, 80) = 53.55$, $p < .001$).

Next, all participants in the main study were presented with two investment options. Option A had a 45% chance of earning a 16% return, a 10% chance of earning a 7% return, and a 45% chance of incurring a loss of 2%. Option B had a 100% chance of earning a 4% return. Then, participants randomly assigned to the anthropomorphized (objectified) luck condition were told to remember that lady luck (luck) was on their side. They next indicated their relative investment preference on a nine-item scale (1 = Option A, 9 = Option B; reverse-coded), how often they engaged in risky decisions (1 = never, 7 = frequently), and demographic information. Twenty-three participants failed an attention check and two

participants whose time spent on the financial risk scenario exceeded three standard deviations from the mean ($M = 43.04$ seconds) were excluded, resulting in a final sample of 208.

Results

We conducted a regression analysis with investment preference as dependent variable, luck condition (objectified = 0, anthropomorphized = 1), risk condition (0 = individual, 1 = shared), frequency of risky decisions (mean-centered) and their interactions as independent variables, and gender as covariate. Analysis yielded a significant simple effect of frequency of risky decisions ($b = .45$, $t = 3.86$, $p = .0002$). More critically, a significant interaction among the three independent variables emerged ($b = -.94$, $t = -2.02$, $p = .04$).

To explore this three-way interaction, we tested for luck condition \times frequency of risky decision interactions in the individual and shared risk conditions separately (see fig. 3). Replicating our previous findings, a significant evoked luck \times frequency of risky decision interaction was detected when the financial risk was individual ($b = .57$, $t = 1.73$, $p = .09$), but not when the financial risk was shared ($b = -.36$, $t = -1.11$, $p = .27$). We conducted follow-up analyses in the individual risk condition that examined preferences within each luck condition. When luck was anthropomorphized, participants who frequently (vs. infrequently) engaged in risky decisions expressed greater preferences for the high-risk option ($b = .87$, $t = 3.78$, $p = .0003$). However, in the objectified luck condition, frequency of engaging in risky decisions did not impact risk preferences ($b = .30$,

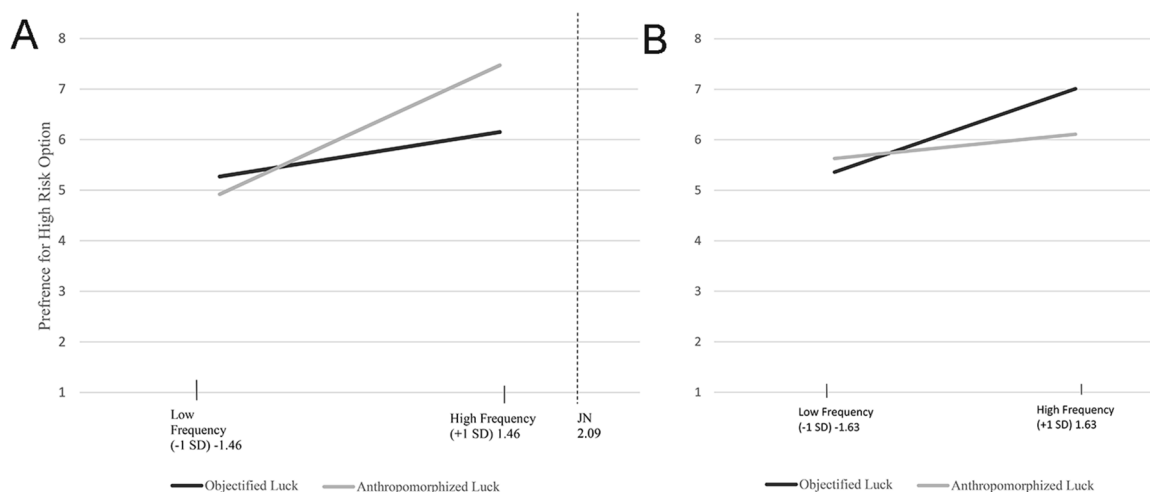


Figure 3. A, Study 4: Effect of frequency of engaging in risky decisions on preference for high financial risk option as a function of luck type and individual risk. B, Study 4: Effect of frequency of engaging in risky decisions on preference for high financial risk option as a function of luck type and shared risk.

$t = 1.28, p = .21$). Floodlight analysis revealed a significant evoked luck effect on preference for the high-risk option at frequency of risky decision scores greater than 2.09 ($b_{JN} = 1.67, SE = .84, p = .05$): those who frequently engaged in risky decisions reported a greater preference for the high-risk option when luck was anthropomorphized.

GENERAL DISCUSSION

This research demonstrates that anthropomorphizing (vs. objectifying) luck may lead to a greater preference for high-risk financial alternatives, consistent with the proposition that anthropomorphized luck can engender shared risk perceptions. Given that many maladaptive consumer behaviors, such as compulsive shopping, emerge from repeated behaviors (Black 2007), we also identified a key moderator to this effect—frequency of risky decision-making. In particular, the anthropomorphizing of luck leads to greater selection of high-risk financial alternatives among consumers who more frequently engage in risky decision-making.

With an increased focus on consumer welfare, research investigating the antecedents of maladaptive consumption behaviors are becoming increasingly important. Our findings thus contribute to research involving risky financial decision-making by showing that consumers' propensity to select an option with more (vs. less) risk may be influenced by the attribution of human-like characteristics to luck. Further, we also add to a richer understanding of how social influences, characterized by the perceived presence of anthropomorphized entities, impact risk-taking decisions.

The current research holds significant public policy implications. From a consumer's financial welfare perspective, policy makers may consider requiring marketers to qualify references to anthropomorphized luck, particularly when consumers may be vulnerable to taking undue financial risks, such as in gambling establishments or when making investment decisions. For example, our research suggests that a sign in a casino insinuating that "Lady Luck is on Your Side" could lead gamblers to engage in higher-risk behaviors than a sign that simply suggests that "Luck is on Your Side" or one that says "Good Luck." Indeed, marketers have relied on lady luck to facilitate increased consumer participation in lotteries and gambles: there are Lady Luck scratch-off tickets, and Lady Luck slot machines and playing cards. Lady Luck was even the spokesperson for the Virginia State Lottery. Thus, consumer advocates may propose limiting the use of lady luck to prevent increased financial risk taking and other maladaptive consumer behaviors, especially in light of scratch-off lottery tickets being the most widespread form of gam-

bling in the US (Barnes et al. 2011), which is extremely popular among lower SES consumers for whom financial losses could be devastating (Ariyabuddhiphongs 2011).

There are, of course, many instances when consumers might enhance their welfare by greater risk-seeking. For example, one of the reasons driving status quo bias (Samuelson and Zeckhauser 1988) is that sticking with the status quo alternative is perceived to be less risky than switching to another option, even if it provides relatively greater benefits. Thus, to encourage switching away from outdated brands or product models, unhealthy foods, initial health plans or retirement portfolios, marketers may invoke anthropomorphized luck, lowering the perceived risk inherent in making the switch, and nudge consumers to transition to alternative offerings.

Our findings provide numerous opportunities for future research. In particular, given the ubiquity of "Lady Luck" in the vernacular, we focused on the effect of anthropomorphizing luck itself on risky decision-making. However, future research might explore if anthropomorphizing tools employed as part of a risky financial transaction, such as stock versus bond trades made on anthropomorphized smartphones, tablets, or laptops, replicate the effect we documented. As well, it would be interesting to examine if anthropomorphizing other luck-related items, such as four-leaf clovers or horseshoes, also engenders perceptions of risk-sharing. Moreover, future research may consider other domains in which high-risk behaviors are prevalent, such as activities related to health risks. Finally, future research might make use of tools from neuroscience, such as electroencephalography (EEG) or functional magnetic resonance imaging (fMRI), to better understand risky decision-making and how these continued behaviors become maladaptive (Clithero, Karmakar, and Hsu 2021; Turel and Bechara 2021).

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