Do Our Choices Tell Us Who We Are?

It Depends on How Easy They Were To Make

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Abstract

This research demonstrates that choice difficulty impacts the inferences people make about the generalizability of their preferences. People infer that they will make similar choices in the future when current choices feel easy versus difficult. Choice difficulty was manipulated via the relative attractiveness of the choice options and via the perceptual fluency of the format in which the options were printed. Participants who chose the less risky of two lotteries when the choices were made to feel easy subsequently rated themselves less likely to gamble at a casino, in a poker game, at a horse race, or at a sporting event than participants who chose the less risky of two lotteries when the choices were made to feel difficult. Preference generalization based on choice difficulty was domain-specific and limited to self versus social judgments.
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*It is not our abilities that show what we truly are, it is our choices.* — J. K. Rowling

The idea that our choices reveal something about who we are is ingrained in our culture. When we make a choice, we often feel that we have learned something about ourselves that generalizes beyond the present decision. This notion is reflected in classic social psychological theories, such as self-perception theory (Bem, 1972), and in more recent research on self-signaling (Bodner & Prelec, 2003). Although psychologists have extensively documented the impact of choices – conceived as binary outcomes – on self-perception, relatively little is known about the impact of the metacognitive experiences that accompany those choices.

The present research explores how the ease or difficulty associated with making a choice impacts the inferences people make about how likely they are to make similar choices in the future. For example, the ease or difficulty by which a person chooses a granola bar over a candy bar might impact the extent to which that person thinks that he or she would prefer healthier to tastier food items in the future. Likewise, the ease or difficulty by which a person selects a particular brand of stereo might influence whether that person thinks that he or she might prefer that brand over other brands when it comes to their other electronic needs.

As it is conceived in this research, choice difficulty may arise directly from the objective properties of the choice options or indirectly from the fluency of the choice task or process. Traditional work on decision conflict and cognitive dissonance has manipulated choice difficulty by varying the relative attractiveness of choice alternatives (Brehm, 1956; Festinger, 1964; Tversky & Shafir, 1992). More recently, Novemsky, Dhar, Schwarz, and Simonson (2007) have
varied choice difficulty indirectly using fluency manipulations such as the readability of the font depicting choice options or the number of reasons requested for a choice.

Choice difficulty is likely to impact preference generalization by signaling to people information about the strength of their underlying preferences. Holding all else constant, people who easily prefer one option to another are likely to have a stronger underlying preference for the features of the chosen option relative to the features of the unchosen option and are more likely to make similar choices in the future than people who struggle with the decision. Decision-makers are likely to infer that the easier a choice feels, the stronger their underlying preferences, and the more likely they are to choose similar options in the future.

When choices feel difficult, decision-makers are likely to infer that their underlying preference is weaker and that they are less likely to make similar choices in the future. The metacognitive experience of difficult choices includes competing preferences, motives, and values. Making salient a person’s multiple motives and values may cast doubt on any one unified set of decision criteria, set competing expectations for future behavior, and lead decision-makers to discount the diagnosticity of a particular choice for predicting their future choices. This may lead decision-makers to make less extreme predictions about their future behavior.

The following studies explore how choice difficulty impacts preference generalization. Study 1 tested whether people infer that they are more likely to make similar choices in the future when current choices are easy versus difficult. To determine whether preference generalization is bounded by the perceived relevance of the current choice to choices in other domains, situations, or contexts, participants were asked to predict their future choices in the same domain and in unrelated domains. Study 2 sought to isolate the feeling of choice difficulty as the mechanism underlying preference generalization by holding constant the content of the
choice options and manipulating choice difficulty via fluency. Finally, Study 3 investigated whether preference generalization is limited to self versus social judgments by asking observers to review another participant’s choices and predict their future choices.

Study 1: Preference Generalization from Relative Attractiveness

Study 1 explores whether choice difficulty impacts the inferences people draw about the generalizability of their preferences. In this study, participants made a series of choices between monetary lotteries that were constructed so that the less risky lotteries would always be chosen. Choice difficulty was manipulated via relative attractiveness (i.e., the less risky lotteries had either slightly better or much better expected values). To assess the extent to which participants generalized their risk preferences, participants were asked to rate the likelihood that they would engage in other risky gambling behaviors (i.e., betting a day’s income at the horse races, betting a day’s income at a high-stake poker game, betting a day’s income on the outcome of a sporting event, or gambling a week’s income at a casino). If people use choice difficulty to gauge the generalizability of their preferences, then they should rate themselves less likely to engage in other risky gambling behaviors after choosing the less risky of two lotteries from a set of easy choices than from a set of difficult choices.

The present account predicts that people use the difficulty associated with making a specific choice to gauge the generalizability of the preference expressed in that specific choice. However, it is possible that the feeling of difficulty simply affects risk-taking in general rather than the inferences people draw from their choices. Consistent with this possibility, the feeling of disfluency has been shown to affect risk perception and risky behavior (Alter & Oppenheimer, 2009a; Song & Schwarz, 2009). Yet disfluency was found to reduce risk taking, and the present research predicts that people in the easy choice condition will infer that they are less likely to
engage in risky gambling behaviors than those in the difficult choice condition. Nonetheless, to rule out the possibility that difficulty simply affects risk-taking in general, participants were also asked to rate the likelihood that they would engage in risky behaviors in two unrelated domains: an investment domain (e.g., investing 5% of one’s annual income in a very speculative stock) and a health/safety domain (e.g., drinking heavily at a social function). Since risk preferences tend to be domain-specific (Weber, Blais, & Betz, 2002), if the present account holds, choices between lotteries should impact inferred risk preferences in the gambling domain but not in other domains.

Method

Participants. Forty-three undergraduates were recruited at the campus student centers at Princeton University and the University of Florida to fill out a short survey. Out of an original 49 participants, six participants (all in the hard condition) were excluded from the analyses because they did not choose the higher probability-lower payoff lotteries.

Procedure. Participants made hypothetical choices between three pairs of lotteries in which the higher probability-lower payoff lottery had a slightly higher or a much higher expected value. Namely, participants chose between an 80% chance to win $50 or a 25% chance to win $100 (hard condition) / $65 (easy condition), a 90% chance to win $25 or a 10% chance to win $75 (hard condition) / $30 (easy condition), and a 75% chance to win $60 or a 20% chance to win $120 (hard condition) / $70 (easy condition). Participants indicated which lottery they preferred and rated choice difficulty on a scale ranging from 1 = very easy to 10 = very hard.

Next, participants completed the domain-specific risk-attitude scale (DOSPERT) (Weber et al., 2002) in the gambling, investment, and health/safety domains. For example, items included “betting a day’s income at a high-stake poker game (gambling domain),” “investing 5% of your annual income in a very speculative stock (investment domain),” and “drinking heavily
at a social function (health/safety domain).” Participants indicated the likelihood that they would engage in the described activity or behavior on a scale ranging from 1 (extremely unlikely) to 7 (extremely likely). Items from each domain were intermixed.

Results

Manipulation check. Participants rated the choices as easier in the easy condition ($M = 2.22$, $SD = .55$) than in the hard condition ($M = 4.00$, $SD = 1.61$), $t(41) = 3.85$, $p < .001$, $d = 1.05$.

Generalization of risk preferences. Figure 1 displays participants’ rated likelihood of engaging in risky behaviors in the gambling, investment, and health/safety domains in the easy and hard conditions. Participants in the easy condition inferred that they were less likely to engage in risky gambling behaviors ($M = 1.61$, $SD = .74$) than did those in the hard condition ($M = 2.32$, $SD = 1.20$), $t(41) = 2.34$, $p = .03$, $d = .73$. Inferences were domain-specific: participants did not draw different inferences about their preferences based on choice difficulty in the investment domain, $t(29.93) = -.15$, $p = .88$, $d = .04$ (equal variances not assumed), or the health/safety domain, $t(41) = .80$, $p = .43$, $d = .22$.

Discussion

Study 1 shows that people generalize their preferences more from easy choices than hard choices. Participants rated themselves less likely to gamble at a casino, in a poker game, at a sporting event, or at a horse race after choosing the less risky of two lotteries from a set of easy choices than from a set of difficult choices. Preference generalization was domain-specific – choice difficulty did not impact participants’ ratings of the likelihood that they would engage in risky investment or health/safety behaviors. This suggests that making difficult choices does not simply impact risk-taking in general, but rather, the difficulty associated with making a specific choice is used to gauge the generalizability of the preference expressed in that specific choice.
Although the relative value of the choice options differed between conditions in this study, it is unlikely that inferences were based on the content of the choices as opposed to the feeling of choice difficulty. If decision-makers had been attending to the information provided by the content of the choices, then they should have predicted themselves to be less likely to engage in risky gambling behaviors in the hard condition than in the easy condition. This is because a person who prefers the less risky option when it has only a slightly better expected value than the alternative (hard condition) should also prefer that option when it has a much better expected value than the alternative (easy condition). For example, one can reasonably assume that a person who prefers an 80% chance to win $50 over a 25% chance to win $100 (hard condition) would also prefer an 80% chance to win $50 over a 25% chance to win $65 (easy condition). That is, a person who prefers a 55% reduction in risk at the cost of $50 in potential rewards could be expected to also prefer the same reduction in risk at the lesser cost of $15 in potential rewards. Nonetheless, to rule out the possibility that preference inferences were based on differences in choice content, the next study will keep the content of the choices constant and vary choice difficulty via a fluency manipulation (for a review of fluency, see Alter & Oppenheimer, 2009b).

Study 2: Preference Generalization from Fluency

Study 2 sought to isolate the feeling of choice difficulty as the mechanism underlying preference generalization. In this study, choice difficulty was manipulated by presenting the choice options in an easy-to-read or difficult-to-read format while holding constant the relative value of the choice options. If the feeling of difficulty associated with making a choice drives preference generalization, then people should rate themselves less likely to engage in other risky gambling behaviors after choosing the less risky of two lotteries from a set of choice options presented in an easy-to-read format than from a set presented in a difficult-to-read format.
**Method**

*Participants.* One-hundred-fifty-one volunteers were recruited to fill out an online survey via Amazon Mechanical Turk, an online forum where volunteers complete surveys in exchange for credit toward Amazon.com products. Only participants who had an Amazon Mechanical Turk approval rate of 95% or higher and lived in the United States were permitted to participate. All participants chose the higher probability-lower payoff lotteries. Thirty percent of participants were male. Participants ranged in age from 20 to 78, with a mean age of 39. The surveys took about two minutes to complete, and participants were compensated with $0.15 credit toward Amazon.com products.

*Procedure.* Participants were presented with the easy lottery choices from Study 1 and were asked to choose which lotteries they preferred. Fluency was manipulated by presenting the choice options in an easy-to-read or difficult-to-read format (Figure 2). In the easy-to-read format, choice options were presented in Verdana 14-point font, with black lettering on a white background, and with numbers written as numerals. In the difficult-to-read format, choice options were presented in Garamond Italic 11-point font, with black lettering on a grey background, and with numbers written as words. In a pre-test, 35 volunteers from Amazon Mechanical Turk rated how easy or difficult the format was to read on a scale ranging from 1 = *very easy to read* to 10 = *very difficult to read*. Participants who were presented with the difficult-to-read format rated the format more difficult to read ($M = 7.56$, $SD = 2.18$) than participants who were presented with the easy-to-read format ($M = 2.00$, $SD = 1.06$), $t(24.96) = 9.69$, $p < .001$, $d = 3.31$ (equal variances not assumed).

Finally, participants completed the DOSPERT (Weber et al., 2002) in the gambling, investment, and health/safety domains. In both the easy-to-read and difficult-to-read conditions,
the DOSPERT was presented in an easy-to-read format. In this study and the subsequent study, the DOSPERT items in the gambling domain were modified slightly to allow for greater variability in risk preferences: stakes were decreased from amounts ranging from “a day’s wages” to “a week’s wages” to amounts ranging from $10 to $100.

Results

Generalization of risk preferences. Figure 3 displays participants’ rated likelihood of engaging in risky behaviors in the gambling, investment, and health/safety domains in the fluent and disfluent conditions. Participants in the fluent condition inferred that they were less likely to engage in risky gambling behaviors ($M = 2.79, SD = 1.41$) than did those in the disfluent condition ($M = 3.33, SD = 1.59$), $t(149) = 2.11, p = .04, d = .36$. Inferences were domain-specific: participants did not draw different inferences about their preferences based on fluency in the investment domain, $t(149) = 1.58, p = .12, d = .24$, or the health/safety domain, $t(149) = .61, p = .55, d = .11$.

Discussion

Study 2 provides converging evidence that preference generalization is rooted in the feeling of choice difficulty. Even when choice content was held constant, participants generalized their preferences more from choices that felt easy than choices that felt difficult. Specifically, participants rated themselves less likely to engage in other risky gambling behaviors after choosing the less risky of two lotteries from a set of choice options that was presented in an easy-to-read format than a set that was presented in a difficult-to-read format. Preference generalization was domain-specific and did not extend to inferences about risk preferences in the investment or health/safety domains.
The fluency manipulation utilized in this experiment was akin to manipulations used in previous research to induce feelings of choice difficulty (e.g., Novemsky et al., 2007). Yet, a possible concern is that, in addition to making the choices feel more difficult, manipulating fluency might have impacted participants’ ability to read and comprehend the choice options. However, the fact that all participants chose the lotteries with the higher expected values regardless of condition suggests that participants understood the choice options.

The next study explores whether preference generalization based on choice difficulty is limited to own versus others’ preferences. Although people use feelings of choice difficulty to gauge the generalizability of their own preferences, they may be less likely to use these feelings to gauge the generalizability of other people’s preferences. People do not have direct access to others’ feelings of choice difficulty and cannot be sure whether their own feelings of choice difficulty are representative of the individual whose preferences they are assessing. Observers, therefore, may place less weight on choice difficulty as a cue for assessing a decision-maker’s underlying preferences and predicting that person’s future behavior.

Study 3: Preference Generalization from Relative Attractiveness for Self Versus Others

Study 3 investigates whether people use choice difficulty to gauge their own preferences but not to gauge other people’s preferences. In this study, observers were presented with another decision-maker’s choices and were asked to predict the likelihood that the decision-maker would engage in other risky behaviors. If preference generalization based on choice difficulty is limited to own versus others’ preferences, then decision-makers who make a series of easy choices should draw stronger inferences about their preferences than decision-makers who make difficult choices or observers who examine easy or difficult choices made by other decision-makers.

Method
Participants. Two-hundred-fifty volunteers were recruited to fill out an online survey via Amazon Mechanical Turk. Out of an original 296 volunteers, one decision-maker (in the easy condition) and three observers (one in the easy condition and two in the hard condition) were excluded because they did not prefer the higher probability-lower payoff lotteries, 41 participants were excluded for providing preference strength ratings that were inconsistent with their own choices or the choices they were evaluating, and one participant in the observer condition was excluded due to suspicion as to whether he was actually evaluating another participant’s choices. Thirty-six percent of participants were male. Participants ranged in age from 18 to 70, with a mean age of 35. The survey took about two minutes to complete, and participants were compensated with $0.10 credit toward Amazon.com products.

Procedure. Participants were randomly assigned to the roles of decision-makers or observers. As in Study 1, decision-makers made hypothetical choices between three pairs of lotteries in which the higher probability-lower payoff lottery had either a slightly higher or a much higher expected value. In this study, decision-makers indicated preference strength on a scale ranging from 1 = extremely prefer lottery A to 8 = extremely prefer lottery B. Preference strength served as a proxy for choice difficulty: choices for which the higher probability-lower payoff lottery (Lottery A) had a slightly higher expected value should feel harder and yield weaker preferences than choices for which this lottery had a much higher expected value.

Next, decision-makers rated the likelihood that they would engage in risky behaviors in the gambling, investment, and health-safety domains via the DOSPERT. In this study, to minimize potential demand characteristics for decision-makers, the DOSPERT was presented within an ostensibly separate section entitled “About You,” which also included demographic questions such as age and gender.
Observers were presented with a survey in which the three higher probability-lower payoff lotteries were selected and were told that the responses were from a previous participant. Observers indicated the likelihood that the decision-maker would engage in risky behaviors via the DOSPERT. To rule out the possibility that self-other differences in preference generalization were due to differences in choice or preference strength between decision-makers and observers, observers were asked to indicate which of the lotteries they themselves preferred and rate their own preference strength. Lastly, all participants were probed for suspicion and debriefed.

Results

Manipulation check. Both decision-makers and observers indicated that they more strongly preferred the higher probability-lower payoff lotteries in the easy condition ($M = 2.99$, $SD = .79$) than in the hard condition ($M = 3.41$, $SD = .60$), $F(1, 246) = 20.75$, $p < .001$, $\eta_p^2 = .08$. Decision-makers and observers did not differ in how strongly they preferred the chosen options, $F(1, 246) = 1.37$, $p = .24$, $\eta_p^2 = .006$.

Generalization of risk preferences. Figures 4 and 5 display ratings of the likelihood that the decision-maker would engage in risky behaviors in the gambling domain by choice difficulty condition (easy/hard) by decision-makers and observers. A 3-to-1 planned comparison revealed that decision-makers in the easy condition inferred that they were less likely to engage in risky gambling behaviors ($M = 2.68$, $SD = 1.40$) than did decision-makers in the hard condition ($M = 3.31$, $SD = 1.63$), observers in the easy condition ($M = 3.35$, $SD = 1.34$), or observers in the hard condition ($M = 3.44$, $SD = 1.36$), $F(1, 246) = 10.65$, $p = .001$, $\eta_p^2 = .04$.

Decision-makers’ likelihood ratings were lower in the easy condition than in the hard condition, $t(135) = 2.41$, $p = .02$, $d = .42$, but observers’ likelihood ratings did not vary based on choice difficulty condition, $t(111) = .33$, $p = .74$, $d = .07$. In the easy condition, decision-makers’
likelihood ratings were lower than observers’ likelihood ratings, \( t(125) = 2.75, p = .007, d = .49 \).

In the hard condition, likelihood ratings did not vary based on role, \( t(117.72) = .47, p = .64, d = .09 \) (equal variances not assumed).

Generalization was domain-specific: planned comparisons revealed no difference between the likelihood ratings of decision-makers in the easy condition and the other three conditions in the investment domain, \( F(1, 246) = 1.59, p = .21, \eta^2_p = .006 \), and a marginally significant difference in the health/safety domain, \( F(1, 246) = 3.43, p = .07, \eta^2_p = .01 \).

Discussion

Study 3 shows that the inferences people draw about their preferences from choice difficulty are limited to self-inferences and do not extend to inferences about other people. Decision-makers generalized their preferences more from easy choices than hard choices, but observers did not draw different inferences from easy choices than hard choices. Additionally, decision-makers generalized their preferences more from easy choices than did observers, but decision-makers and observers did not differ in the inferences they drew from hard choices. Choice generalization was domain specific – neither decision-makers nor observers drew different inferences about their preferences based on choice difficulty in the investment or health/safety domains. These findings are consistent with the notion that the choice difficulty a decision-maker experiences signals to them something about the strength of their underlying preferences. Observers draw weaker inferences because they do not have direct access to a decision-maker’s feelings of choice difficulty and cannot be sure whether their own choice difficulty is representative of the individual whose preferences they are assessing.

General Discussion
The present research demonstrates that choice difficulty impacts the inferences people make about the generalizability of their preferences. People infer that they are more likely to make similar choices in the future when current choices feel easy versus difficult. In three studies, participants who chose the less risky of two lotteries when the choices were made to feel easy subsequently rated themselves less likely to gamble at a casino, in a poker game, at a horse race, or at a sporting event than participants who chose the less risky of two lotteries when the choices were made to feel difficult.

The same pattern of results was obtained regardless of whether choice difficulty was manipulated via relative attractiveness or fluency, supporting the notion that these inferences are rooted in the feeling of choice difficulty. The effect of choice difficulty on preference inferences was not limited to younger individuals who may have little experience gambling their own money, as evidenced by the fact that the same pattern of results was obtained both with a college student sample and an older, non-student sample. Moreover, this effect is unlikely to be due to demand given that the pattern of results persisted regardless of whether the independent and dependent measures were administered together or in ostensibly separate sections of the survey.

Across all studies, choice generalization was domain specific – the difficulty of the lottery choices impacted participants’ inferences about the likelihood that they would engage in other risky gambling behaviors, but it did not impact participants’ ratings of the likelihood that they would engage in risky investment or health/safety behaviors. This suggests that the inferences drawn from choices have to do with the specific content of those choices and the perceived relevance of that content to other domains, situations, or contexts.

Preference inferences from choice difficulty were limited to self-inferences and did not extend to inferences about other people. Observers who reviewed another person’s choices did
not draw different inferences from easy choices than hard choices. Although observers and decision-makers drew equally weak inferences from hard choices, observers drew weaker inferences than did decision-makers from easy choices. This is consistent with the notion that observers do not have direct access to others’ choice difficulty and cannot be sure that their own feelings of difficulty are representative of the person whose preferences they are assessing.

The finding that actors draw stronger inferences than observers when choices feel easy may seem inconsistent with the actor-observer bias, the tendency for actors to attribute their behavior to situational causes whereas observers attribute actors’ behavior to dispositional causes (Jones & Nisbett, 1972). This apparent contradiction may help to clarify the underlying processes involved in these and other self-other discrepancies – namely, actors have access to information that observers do not. The actor-observer bias typically arises from the fact that people do not have access to information about the situational pressures that are influencing the behaviors of others, but do have access to that information regarding themselves. In this case, people have access to internal information about themselves that they lack for others. As such, the results align with those of the ostensible mechanism underlying the actor-observer bias, although the behavioral implications are the opposite.

If choice difficulty impacts the inferences people make about the strength of their underlying preferences and predictions about their future behavior, then it might also impact people’s self-concepts more generally. Baumeister (1986) posits that people form their identities, in part, based on choice-driven self-definition processes. Choice-driven self-definitions are thought to emerge when people self-reflect to resolve a decision. Difficult choices are thought to be more informative of identity because they require people to reflect on, grapple with, and prioritize competing values and goals. The present research is consistent with the notion that
choice processes influence self-perception. However, it suggests that easy choices, rather than difficult choices, have a greater impact on self perception because they signal to people that their underlying preferences are strong and likely to generalize to future decisions.

Whether people merely perceive themselves to be more likely to act consistently after making an easy choice or whether easy choices actually lead to more consistent choices remains to be seen. There is some research to suggest that people are more likely to choose the same option repeatedly when the choice is made to feel easy versus difficult (Liberman & Förster, 2006), but it is not clear to what extent and under what conditions that choice would influence related choices in other situations and contexts. An easy choice might encourage people to choose similar options in the immediate short-term, but as the choice fades in memory, people may be less likely to choose similar options in the future as they would predict.

Future research might also examine whether the inferences people make at the time of a decision differ from those they make when considering the decision in retrospect. The ease or difficulty of a decision is likely to be experienced more intensely at the time of a decision than in retrospect. Additionally, just as people tend to make observer-like attributions for their past and future selves (Pronin & Ross, 2006), decision-makers may come to view their own choices as they would another person’s choices with the passage of time. Consequently, the inferences decision-makers make about the prevalence of their preferences may be more regressive or less dependent on choice difficulty when choices are considered in retrospect.

Another potential direction for future research might be to examine how choice difficulty impacts the inferences observers make when decision-makers choose options that observers deem less attractive. Previous research suggests that observers draw stronger inferences about decision-makers whose preferences differ from their own than those who share their preferences
(Hansen & Donoghue, 1977; Kelley, 1967; Pronin, Gilovich, & Ross, 2004; Ross, Greene, & House, 1977). Thus, under these conditions, self-other differences in preference generalization may reverse: decision-makers and observers may draw similar inferences from easy choices, but observers may draw stronger inferences than decision-makers from hard choices.

This research has practical implications for encouraging preference generalization: namely, making choices feel easy encourages choosers to infer that they will prefer similar options in the future. For example, marketers who wish to encourage consumers to generalize their preferences from a single product decision (e.g. regular or organic strawberries, Oster or KitchenMaid blender) to a broader class of preferences (e.g. regular vs. organic products, Oster vs. KitchenMaid appliances) should strive to make the consumer’s choice as easy as possible (e.g. by comparing their product to a dud alternative versus a close competitor). After all, it is not just our choices that show what we truly are, but the ease by which we make them.
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