

WHEN YOU CAN'T HAVE WHAT YOU WANT FOR SOMETHING YOU MUST DO:  
UNAVAILABILITY AND PERCEPTIONS OF SELF-EFFICACY

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**Abstract**

Decision making research has shown that people are not consistent in their preferences when asked to make sequential decisions for which no new information is given. For example, when someone is asked to compare three objects and he indicates his preferences as  $A > B$  and  $B > C$ , it follows that he should prefer  $A > C$ —but that is not always the case. This study measures how unavailability affects people's (1) preferences in these sequential decisions, and (2) perceptions of self-efficacy in tasks contingent on their choices. The results suggest that people's performance on a creative task is unaffected by their choice assignment, but their evaluation of their performance is related to individual differences in planning for time. From this, marketers and policymakers can design product arrays or choice sets in ways that drive or diminish attention to certain options or attributes. When compounded with knowledge of individual differences, such as people's planning tendencies—which can be approximated by purchases and other behaviors—purveyors of choices are empowered to target consumers with scary effectiveness. Such manipulation, even when intended to protect people from themselves, creates an illusion of choice, asymmetries of information, and resultant ethical dilemmas.

## Introduction

Consumers face choice overload for nearly every purchase decision. Even for something as basic as toilet paper, one must consider numerous plies, patterns, and brands. For more hedonic or luxury items, the choice process may be even more protracted. Ironically, decisions can also be colored by “choices” that aren’t even available: Should one buy the latest iPhone or the Samsung phone now—or wait for the iPhone *n* to be released in a few months?

It’s troubling that unavailability can affect people’s decisions—despite adding no new or real information to the consideration set—as it can be manipulated easily by suppliers of products, services—and even ideas—to create the illusion of choice when in fact one’s choices have been deliberately constrained. An eager parent, upon finding the latest popular toy sold out just before Christmas, may feel entirely autonomous as he selects a suitable replacement – as well as when he purchases the popular toy a month later for no occasion but that it was in stock and he had previously promised it to his kid. Cialdini describes how toy manufacturers impose scarcity in this way to prevent post-holiday sales slumps (2001). In other domains, choices are offered selectively in order to protect people from their own irrationality. Sunstein and Thaler advocate for this libertarian paternalism in a variety of health, labor, and financial policies (Sunstein & Thaler, 2003).

The effects of unavailable options and other context effects on preferences have been well-documented. Much of the extant literature examines effects on a present choice set, but there is little that examines how people, after settling for a second choice option, approach later decisions where the once-unavailable option becomes selectable. For

example, a heavily promoted new shampoo may be sold out in stores shortly after its release. Someone seeking it out will likely be disappointed by its unavailability, but will purchase an alternative they still need shampoo. When that “settled for” bottle is empty, however, how then do people evaluate their original first and second choices, having gained information on only their second choice? Further, if the object-to-be-chosen is instrumental to a task whose performance can be measured, does receiving a first versus second choice affect (1) predictions of performance, or (2) actual performance?

Understanding how people make decisions with limited information has important implications for improving human welfare, as people routinely make choices affecting their health, education, and finances. This paper will attempt to aggregate myriad studies employing different terms but similar paradigms to investigate unavailability and choice. In a study, we demonstrate how unavailability affects people’s (1) preferences in sequential decisions, and (2) perceptions of self-efficacy in tasks contingent on their choices. The results suggest that people’s performance on a creative task is unaffected by their choice assignment, but their evaluation of their performance is related to individual differences in planning for time. Finally, we discuss the theoretical, methodological, and practical implications of our findings.

## Literature Review

### *When Choices Aren't*

People's choices are important to them, as they use them to signal personal values and improve their situation. Further, people endow their choices with subjective value simply because they have chosen or used them (Morewedge, Shu, Gilbert, & Wilson, 2009). However, post-decisional feelings can be affected by persuasive tactics that rely on making a target feel satisfied with a choice that seemingly originates from within. The door-in-the-face technique, for example, presents the target with an unreasonably large request with the expectation of rejection, only to "negotiate" down to the lower target request. This leaves the target feeling more content with the "compromise" option than if that same option had been presented outright.

There are also subtler methods of fabricating freedom of choice. Manipulations of the composition of a choice set are defined as context effects (Ratneshwar, Shocker, & Stewart, 1987) and have been shown to violate traditional consumer choice models—specifically independence from irrelevant alternatives (IIA), regularity, and transitivity of preferences (Huang, 2010). IIA holds that additions to a choice set shouldn't affect the preference order of the pre-existing alternatives, while regularity adds that these additions shouldn't increase the probability of any pre-existing alternatives being chosen (Luce 1959, 1977). More basically, the axiom of transitivity holds that if someone prefers A over B, and B over C, then he should prefer A over C; however, context effects lead to violations of this. Some explanations for these violations are introduced as follows:

*Attraction and substitution effects*

Huber, Payne, and Puto challenge IIA and regularity by showing how adding an asymmetrically dominated alternative (an item dominated by one item in the set but not the other) can increase the probability of choosing the dominating option (1982).

While this attraction effect is driven by a contrast in attribute performance, there is also sometimes a confounding effect of similarity. Becker, DeGroot, and Marshak (1963) and Tversky (1967) have documented this as the substitution effect (or the “similarity hypothesis”), in which an item added to a choice set tends to detract from the choice share of items similar to it.

*Decoy and phantom effects*

In studies of attraction and substitution effects, the alternative that is added to drive attention to an existing choice is called a decoy. The effect is so strong that in some studies, the decoy is chosen less than 2 percent of the time (Huber, Payne, & Puto, 1982), ceding nearly all of its choice share to the target item. Interestingly, when a decoy is removed, the choice shares of the original options do not return to the level that existed before the decoy was introduced. Hedgcock, Rao, and Chen replicate this in a variety of contexts, including political candidates, health plans, apartments, and cars (2009).

Similarly, a phantom is an illusory option that one considers to be real and in the immediate choice set even though it is not available. It may be a yet-to-be-released or out-of-stock item, or even a perennial fantasy, as in holding out for a dream job. Despite

their absence from the choice set, phantoms can “influence a decision maker’s preferences and decision behavior through contrast effects in perception, shifts in attribute weights, and changes in motivation” (Pratkanis & Farguhar, 1992). Farquhar and Pratkanis found that the illusory presence of a phantom increased the importance of its focal attribute, which increased the likelihood that participants would choose an object that performed closely to the phantom (1992).

*Attribute carry-over effect and attribute-balance effect*

In their studies on phased choice processes, Boland, Brucks and Nielsen found that when their first choice is unavailable, consumers with weak attribute preferences are likely to violate their previously identified second choice in favor of an option that shares a “differentiating” feature with the unavailable top choice. That is, they tend to choose as their second choice something they’d eliminated in an earlier stage (rather than a product performing closer on features shared with the unavailable first choice) (2012).

*Scarcity*

When scarcity is due to high demand (as opposed to limited supply), consumers employ an heuristic that leads them to rate the scarce product as being higher in quality (Gierl & Huettl, 2010). Retailers frequently employ low-quantity signals such as “limited edition” or “only  $n$  left in stock” to inflate prices or drive purchases.

*Forced choice vs. no-choice (rejectable) choice sets*

Parker and Schriff found that when forced to choose among immediately available options, as when replacing a broken cell phone, people are more likely to employ comparative decision processes, whereas with rejectable choice sets (for which they have the option to not choose at all), they use more evaluative judgments to determine not only the preference order of alternatives, but the worth of choosing anything at all (2011). Thus, it is more likely that people will consider unavailable, or phantom, alternatives when their need to choose is not urgent or mandated.

*Reactance and boomerang effects*

One byproduct of forced choices is psychological reactance, whereby a person, sensing impositions on his behavioral freedoms, adopts an action or attitude counter to the mandated behavior—and sometimes contrary to his actual interests (Hammock & Brehm, 1966). This is related to the allure of taboos like marijuana, for which anti-smoking campaigns have been shown to drive a boomerang effect of increased desire for and use of the substance. Some more commercial products have benefited from the heavy publicized federal restrictions on their sales or distribution. After being banned by the United States Food and Drug Administration but before being completely pulled from store shelves, the alcoholic, caffeinated drink Four Loko saw surges in sales and social media support among its young target demographic (Johnson & Sieff, 2010). In this way, unavailability imposed by an authority can drive preference for the banned or restricted product.



*Paradox of choosing not to choose*

When choices are too plentiful, Iyengar and Lepper found that consumers may actually become demotivated to choose because of increased anxiety to choose the “right” option (Iyengar & Lepper, 2000). Thus, choice overload could be used to decrease the salience of an unavailable preferred option by distracting from its absence with an abundance of irrelevant alternatives.

Even if a choice set is unadulterated by context effects, the mere act of choosing can produce subsequently irrational behavior. In the context of unavailable choices, these consequences are important because they can create bias toward less-preferred options. Studies of the endowment effect demonstrate how people value an object they’re endowed with at a higher selling point than the price they paid to acquire it (Morewedge et al., 2009). It follows that the endowment effect would also apply, though perhaps to a lesser degree, to objects that are “settled for,” as when a preferred choice is unavailable.

**Hypothesis**

While people tend to value their chosen lot over what they have not chosen (and over what others have chosen), it is unclear how this plays out for “settled for” (second) choices when a preferred first choice is unavailable. Our central research question examines this in a situation where people’s choices are instrumental to a creative task whose performance can be measured. We hypothesize that:

**H1:** People assigned their second choice for a creative task will perform worse than those given their first choice.

**H2:** People with greater tendencies to plan engage in multi-phased choice processes that diminish their disappointment with a second choice assignment.

Hypothesis 2 stems from Boland, Brucks, and Nielsen's manipulation of phased choice processes. In their study, they found that the attribute carryover effect was diminished when participants were asked to evaluate objects in two rounds rather than one. That is, they were less likely to switch preferences if they identified their top two products and then their ultimate first choice than if they were asked to indicate only their most preferred option. We speculate that people with greater tendencies to plan will engage in multi-phased choice processes unprompted, and that these individual differences may lead to different evaluations of one's choice assignment.

## **Method**

### *Procedure and Participants*

One hundred eighty-seven Amazon Mechanical Turk workers participated in the study. Workers were screened for location (United States) and HIT approval rate (greater than 95 percent). The survey was administered using Qualtrics. Participants were told that research has shown that listening to certain kinds of music can enhance creativity. They were then asked to evaluate three songs based on written descriptions and select one of them to listen to during an upcoming creative task.

For the creative task, participants were given two minutes to list all the uses of a paper clip (Guilford's Alternative Uses Task) while their first or second choice song played in the background. To control for any actual effects of music, all participants listened to the

same song (Kreisler's "Schon Rosmarin")<sup>1</sup>. Afterward, they rated how much they thought the music contributed to their performance on the task, reevaluated their preferences for the songs they did not listen to, and completed an inventory for Propensity to Plan for time (Lynch Jr, Netemeyer, Spiller, & Zammit, 2010)

### *Stimuli Development*

The three music reviews were excerpted from AllMusic.com. The excerpts are vague and use abstract adjectives like "impersonal," "present," and "different," communicating no information about the genre or artist. This way, all participants could be subjected to the same song without knowing if it was actually the song they chose (or didn't choose).

### *Independent Variables*

Participants were randomly assigned to one of four conditions, being told they were listening to either their first or second choice song and then asked (or not asked) to predict their performance on the creative task.

### *Dependent Variables*

The dependent variables for testing hypothesis 1 are three measures of creativity on Guilford's Alternative Uses Task. Two coders blind to the hypothesis rated each response on a scale of 0 to 2 for originality and level of detail. Additionally, the number of responses given in the two-minute period was tabulated for each participant.

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<sup>1</sup> One participant pointed out that the word "song" should describe a composition for voices, while "Schon Rosmarin" is an instrumental piece of music. We will use the word song to save space.

## Results

To test both hypotheses, we constructed one-way analyses of variance (ANOVA).

### *Choice assignment and forecasting*

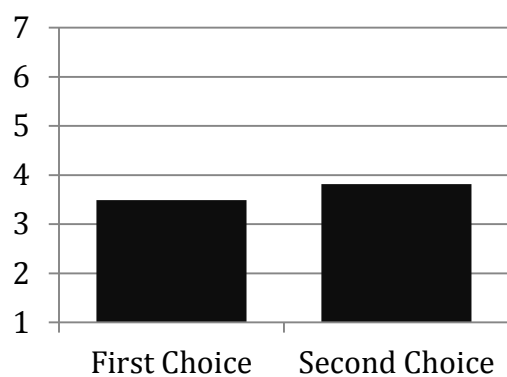
There were no significant main effects of choice assignment or forecasting on creative task performance or evaluations of performance. However, we might speak of a trending (i.e. more significant than a coin flip) effect of choice assignment on participants' perceptions of the effect of the music during the creative task. Participants in the second choice condition attributed more of their performance to the choice of song than participants who chose and listened to what they believed was their first choice ( $M_{\text{first}}=3.49$ ,  $M_{\text{second}}=3.82$ ,  $p=.189$ ).

### *Propensity to plan for time*

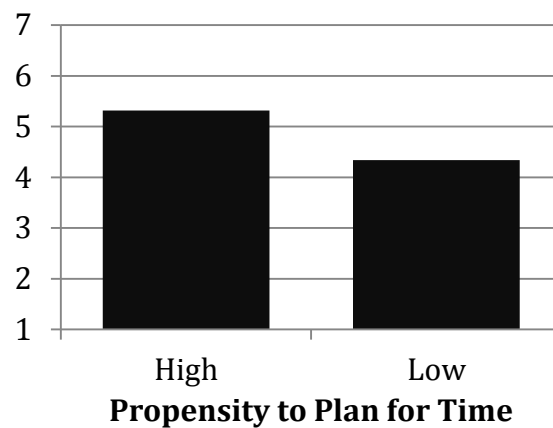
Responses for the twelve Propensity to Plan (PTP) scale items were averaged to create a single score for each participant ( $M=3.42$ , range: 1.36–5.57). A median split was used to distinguish between individuals with high versus low propensities to plan for time. In the high-PTP group, participants reported significantly higher predictions of performance on the creative task (in the forecasting conditions) ( $M_{\text{high}}=5.32$ ,  $M_{\text{low}}=4.34$ ,  $p=.0001$ ), higher post-task evaluations of their performance ( $M_{\text{high}}=4.35$ ,  $M_{\text{low}}=3.58$ ,  $p=.0008$ ) and marginally greater enjoyment of the song ( $M_{\text{high}}=4.99$ ,  $M_{\text{low}}=4.55$ ,  $p=.094$ ) than low-PTP participants.

**Figure 1**

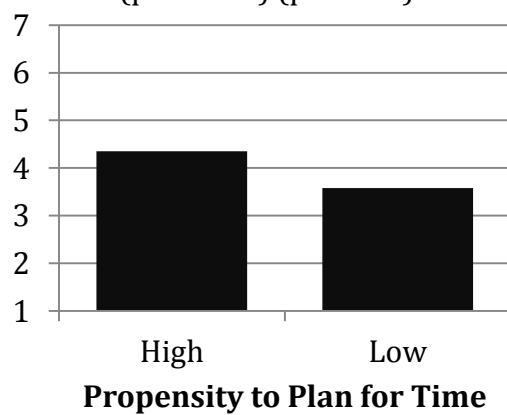
Perceived effect of music on task performance ( $p=.189$ )

**Figure 2**

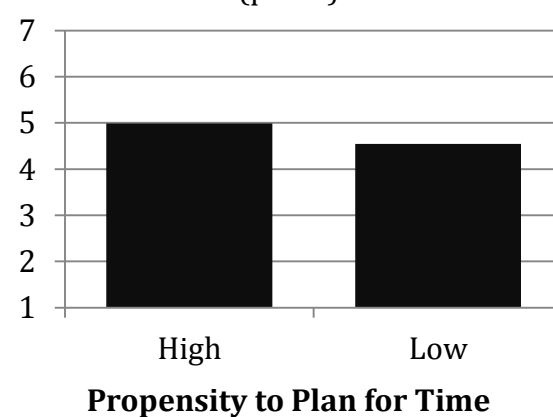
Prediction of creative task performance ( $p=.0001$ )

**Figure 3**

Evaluations of task performance (post-task) ( $p=.0008$ )

**Figure 4**

Enjoyment of song ( $p=.09$ )



## Discussion

### *Summary of Results*

While there was no main effect of the independent variables on performance or predictions of performance on the creative task, the study shows that people who scored high in PTP were more confident in their performance on the creative task and enjoyed the song more, regardless of their choice assignment, than people who scored low in PTP. Thus, hypothesis 1 is unsupported, but there is evidence for parts of hypothesis 2. We reasoned that individual differences may lead certain people to forecast unavailability so that they feel less jilted if their first choice is unavailable. The significant difference in song enjoyment between high and low PTP participants supports this.

It is interesting that there was an effect on confidence (pre- and post-task evaluations of performance) between the high and low PTP participants, but not an effect on actual performance. If anything, this suggests that there were no placebo effects at play; that is, because there was no difference in performance between conditions, there is no reason to suspect that participants who listened to their first choice felt bolstered during the task while those subjected to their second choice felt debilitated.

### *Limitations and Directions for Future Research*

Future research on the effect of unavailability in decision making may seek to better emphasize the unavailability and the importance of the choice in studies. In this experiment, participants in the second choice condition were simply told that their first choice was unavailable and were asked to choose again. An explanation for the unavailability was omitted deliberately, as it has been shown that consumers respond

differently to certain types of unavailability (e.g. sold-out vs. limited run) (Gierl & Huettl, 2010). However, there are ways to make the unavailability more salient such that participants are neither suspicious nor prone to write it off as, say, a glitch in the survey program. Additionally, participants may feel more motivated to choose carefully if there is an incentive or consequence for their performance on the creative task. Finally, it is important to devise a stimulus whose efficacy or attributes can be confidently and objectively rated. In this study, participants may have felt that their choice of song was ill-informed rather than carefully constructed, as they were not given information on exactly what qualities of music might enhance creativity.

### *Practical Implications*

Extant literature on context effects examines how a choice set's construction can influence how and what people choose. From this, marketers and policymakers can design product arrays or choice sets in ways that drive or diminish attention to certain options or attributes. When compounded with knowledge of individual differences, such as people's planning tendencies—which can be approximated by purchases and other behaviors—purveyors of choices are empowered to target consumers with scary effectiveness. Such manipulation, even when intended to protect people from themselves, creates an illusion of choice, asymmetries of information, and resultant ethical dilemmas.

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